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39TH CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 109.

J. B. F. Davidge

ANNUAL REPORT

OF THE

COMMISSIONER OF PATENTS

FOR

THE YEAR 1866.

VOLUME I.

WASHINGTON
GOVERNMENT PRINTING OFFICE.
1867

IN THE HOUSE OF REPRESENTATIVES,
February 28, 1867.

Resolved, That there be printed of the Annual Report of the Commissioner of Patents for the year 1866, together with the illustrations, five thousand extra copies for the use of the Commissioner of Patents, and ten thousand extra copies for the use of the House.

IN THE SENATE OF THE UNITED STATES,
March 2, 1867.

Resolved, That there be printed for the use of the Senate four thousand copies of the Annual Report of the Commissioner of the Patent Office for the year eighteen hundred and sixty-six.

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ALPHABETICAL LIST OF INVENTIONS.

Invention or Discovery.	Name of Patentee.	No.
A.		
Abdominal supporters	E. Dexter	55,252
Abdominal and uterine supporters	J. S. Havens, T. M. Johnson, and C. W. Howe.	57,505
Accordeons	C. F. Zimmerman	56,319
Accoutrements, Cavalry	J. K. Mizner	52,064
Acetate of alumina	G. T. Lewis	59,238
Acetate of lead, Manufacture of	J. E. Fournier	56,505
Acid, Carbonic, Charging water with	J. S. Baldwin	55,040
Acid, Carbonic, Preserving and storing	J. S. Baldwin	55,039
Acid, Carbonic, from mixtures of gases, Collecting and separating.	J. S. Baldwin	55,038
Acid, Hydrochloric, bicarbonate of soda, and potash	H. M. Baker	57,458
Acid, Neutralizing, on sheet-iron	E. A. Harvey	54,538
Acid, Sulphuric, used in refining petroleum, &c., Recovery and purification of.	M. Barrett	59,531
Aerating and mixing substances, Apparatus for	E. L. Pratt	59,449
Agitating and heating substances	G. Nebeker	55,886
Ague, Cure of, Composition for	J. Monfort	60,538
Air, Carburetting	L. Stevens	59,473
Air, Carburetting	O. P. Drake	54,132
Air, Carburetting	L. Stevens	58,559
Air, Carburetting	S. T. McDougal	55,324
Air, Carburetting	A. Patterson	58,471
Air, Carburetting	H. Fairbanks	53,798
Air, Carburetting	F. H. Brown	55,950
Air, Carburetting	S. R. Divine	57,686
Air, Carburetting	J. B. Terry	55,741
Air, Carburetting	J. F. Rowley, W. M. Sloane, and J. E. Woodruff.	57,639
Air, Carburetting	P. Mihan	57,543
Air, Carburetting	C. B. Loveless	51,841
Air, Carburetting	F. H. Brown	55,949
Air, Carburetting	E. S. Hutchinson and H. L. McAvoy.	51,946
Air, Carburetting	W. Thompson	53,504
Air, Carburetting	J. E. Spence	52,087
Air, Carburetting	D. McDonald	57,442
Air, Carburetting	J. F. Spence	57,788
Air, Carburetting	J. McGeary	58,861
Air, Carburetting	H. L. McAvoy	57,164
Air, Carburetting	H. L. McAvoy	57,940
Air, Carburetting	E. A. Pond and M. S. Richardson	53,481
Air, Carburetting	C. B. Loveless	53,843
Air, Carburetting	T. F. Frank	59,991
Air, Carburetting	L. Stevens	59,474
Air in carburetting machines, Forcing	J. F. Birchard	54,491
Air, Charging, with gasoline	B. Pickering	60,417
Air, Charging, with hydro-carbon vapors	H. B. Myer	52,876
Air, Dust and gases from, Removing	J. D. Whelpley and J. J. Storer	53,068
Air, gas, &c., Carburetting	A. C. Messenger	55,778
Air, &c., Heating and cooling	L. Perkins	56,338
Air, Supplying a continuous flow of	B. Rouquayrol	53,385
Air to air chambers, Supplying	P. H. Vanderweyde	57,412
Air from cases, Expelling	D. Clavidge	54,686
Alarm, Burglar	H. Yerty	59,307
Alarm, Burglar	C. A. Blake	59,949
Alarm, Burglar	A. F. Hammond	54,531
Alarm, Burglar	E. Hoole	54,353
Alarm, Burglar	A. J. Ross	55,165
Alarm, Burglar	M. C. Heptinstall	53,144
Alarm, Burglar	W. O. Hills	52,999
Alarm, Burglar	M. P. Murphy	53,030
Alarm, Burglar	H. Wickham, jr	55,754
Alarm, Burglar	G. Simpson	55,378
Alarm, Burglar	R. M. Webb	56,471
Alarm, Burglar	H. H. Potter	56,262
Alarm, Burglar	W. Farnham	60,162
Alarm, Burglar, and door bell	E. H. Crane	55,823
Alarm, Burglar, and door bell	D. L. Collins	59,820
Alarm, Burglar, and door fastener	F. Oakley	57,654
Alarm, Burglar, for windows	W. H. Winans	53,239
Alarm, Fire	C. Dion	53,757

Invention or Discovery.	Name of Patentee.	No.
Alarm, Fire	R. Powers	54,202
Alarm, Fire	A. Fontaine	59,379
Alarm, Fire	C. D. Kubach	55,957
Alarm, Fire and burglar	E. Middleton	58,662
Alarm, Thief	J. F. Lewis	53,015
Albums, Photographic	R. Van Velthoven	59,323
Album, Porcelain and card	J. C. Spooner	53,354
Alcohol, beer, &c., Cooling and condensing	J. Trageser	55,746
Alcohol, Rectifying	H. Lamotte	59,149
Alcohol and other spirits, Manufacture of	J. F. Collins	59,891
Alkali, Caustic	L. Prang	55,158
Alkali, Caustic, Putting up	T. C. Taylor	52,910
Alkali, Caustic, Putting up	T. C. Taylor	52,465
Alkali, Waste, Recovering	H. M. Baker	54,093
Alkali used in the manufacture of paper, Waste, Recovering	T. F. Lehmann	53,839
Alkaline solutions, Evaporating	C. Heaton	53,298
Alloy, Improved	F. P. Pfeiffer	57,184
Almonds, Peeling	H. Wathew	59,324
Alphabet blocks	S. L. Hill	59,603
Alphabet frames	E. B. Nourse	58,463
Aphabeticon	J. H. R. Reffelt	51,864
Altiscopes	J. Clark	53,115
Alumina, Acetate of	G. T. Lewis	59,238
Alumina, Sulpho-acetate of	G. T. Lewis	59,239
Amalgamator	J. D. Whelpley and J. J. Storer	58,010
Amalgamator	T. Tripp and G. S. Curtis	54,075
Amalgamator	T. Tripp and G. S. Curtis	54,076
Amalgamator	G. S. Curtis and T. Tripp	54,062
Amalgamator	H. A. Gaston	53,435
Amalgamator	G. B. Simpson	54,028
Amalgamator	S. G. Sturges	58,149
Amalgamator	S. F. Charles	58,335
Amalgamator	T. Tripp	54,074
Amalgamator	W. M. Fuller	53,805
Amalgamator	J. T. Staats	53,194
Amalgamator	W. Kendrick	55,114
Amalgamator	E. B own	58,981
Amalgamator	E. Hamilton	58,246
Ambulances	D. H. Rueker, and J. E. Allen and J. S. Smith.	59,459
Anchor	F. J. Latham	57,339
Anchor	P. Dinzey	55,593
Anchor	C. F. Brown	54,847
Anchor	G. C. Pattison	58,128
Anchor stopper	G. H. Babcock	56,873
Anchor tripper	E. Davidson	52,143
Andirons and fire grates, Portable	J. H. Coate	59,968
Aniline, Coloring matter from	P. Chevalier	53,241
Animals, Protecting from heat of the sun	C. Elveena	58,081
Animal and veg-table substances, Packing	F. Stabler	53,355
Ankle supporter	R. Cunningham	53,276
Annealing steel and other metal	E. Savage	52,612
Annunciators	M. L. Deering	51,809
Annunciators, Hotel, Hydro-pneumatic telegraphs for	G. G. Percival	51,858
Anvil and vice, Combined	J. D. Barton, F. S. Rogers, and D. Fisher.	56,346
Anvil for making horseshoes	A. S. Wilkinson	56,311
Anvil for swedging calks for horseshoes	P. Badore	60,610
Anvil on which to rivet trunks	W. D. Burnett	60,617
Apparatus for obtaining the measures of ladies' dresses	C. E. McDonald	60,028
Apple corer and slicer	R. Onderdonk	52,740
Apple parer	H. Keyes	59,843
Apple parer	D. H. Whittemore	59,884
Apple parer and corer	H. Selick	57,391
Apples, Coring and quartering	J. J. Vankersen	56,063
Arms, Artificial	I. Stoffel	57,594
Artists' materials, Drying	G. D. Jones	60,382
Ash-sifting device in cooking stoves	E. Mingay	55,587
Augers	H. T. Moody	55,144
Augers	E. G. Lamson	52,056
Augers, Annular	R. Stewart	53,896
Augers, Finishing, Tool for	R. Jennings	56,058
Augers, Hollow	J. McClure	58,658
Augers, Hollow	J. H. Smith	56,459
Augers, Hollow	F. Beals and M. Smith	51,911
Augers, Hollow	J. M. Smith	55,382
Augers, Hollow	J. Lefeber	58,436
Augers, Hollow	A. Wyckoff	53,722
Augers, Post-hole	J. M. Leeds and J. E. Hollowell	52,180
Augers, Screw, Swaging the heads of	R. Jennings	56,869
Auger bits, Making	W. W. Grier and R. H. Boyd	54,893
Awning	J. C. Bowe	59,548
Awning	J. A. Pain	53,859
Axes, Heads of, Hammering	L. Dodge	54,311
Axes, Making	J. L. Lewis	53,155

Invention or Discovery.	Name of Patentee.	No.
Axes, Heading	E. F. Hurd	57,142
Axes to their handles, Attaching	H. C. Wooding	55,437
Axes on their handles, Securing	G. W. Simonds	56,281
Axes for wood-splitting machines	J. H. Silkman	52,216
Axle, Car, Machine for determining the load of	J. H. Ehrhardt	52,653
Axles, Car-wheel, Attaching	G. Sewell	52,328
Axles, Carriage	S. Barker	59,162
Axles, Carriage	C. Young	54,638
Axles, Carriage	C. Young	54,639
Axles, Carriage, Anti-friction	E. C. Otis	56,601
Axles, Carriage, Lubricating	N. B. Brown	54,246
Axles, Draught poles to, Attaching	E. C. Smith	60,075
Axles, Hubs to, Attaching	C. H. Guard	58,247
Axles, Locomotive, Bearings of	J. P. Laird	53,009
Axles, Wheel hubs to, Securing	I. Osgood	59,445
Axles and wheels	T. A. Lane	52,422
Axles and wheels for railroad cars	D. Babson, 2d	52,949
Axles of machinery, Anti-friction device for	N. Bailley, C. Durand, G. H. Mesnard, and Z. Porrier.	58,739
Axles for vehicles and journals for machinery	R. P. Gillett	52,561
Axle box	S. F. Allen	57,657
Axle box	D. H. Dotterer	53,588
Axle box	J. Christy	52,029
Axle box	C. M. Oliver	59,632
Axle box	M. V. Miller and G. Henry	56,977
Axle box	O. H. P. Robinson	53,186
Axle box	F. Leppens	59,616
Axle box	W. F. Rippon	54,775
Axle box	J. Montgomery	54,753
Axle-box cover	F. K. Hain	58,640
Axle-box cover	W. S. Auchincloss	54,666
Axle box, Railroad	J. J. Lahaye	54,563
Axle box for carriages, Self-lubricating	S. S. Putnam	59,779
Axle boxes for wagons	A. E. Smith	57,987
Axle journals, Carriage, Lubricating	G. W. Parsons	60,049
Axle and journal for carriages	L. Dorman	57,100
Axle nuts for wagons, &c	J. Haggert	59,835
Axle skein moulds	J. G. Holt	55,295
Axle skeins and hub boxes, Sand cores for, Making	J. G. Holt	59,840
Axle trees, Bending, Screw clamp for	L. Wilkinson	59,934
B.		
Baby jumper	J. P. Thompson	58,510
Baby jumper	W. Gibson	55,849
Baby walker	P. Pallissard	55,529
Baby walker and cradle	J. H. Brown	51,795
Bags, Carpet	E. A. G. Roulstone	59,270
Bag, Carpet frame	C. and Z. Walsh	57,262
Bags, Feed	F. J. Simeon	55,726
Bags, Mail, Water-proof	J. M. Jarrett	59,228
Bags, Tobacco	G. Aymard	57,275
Bag, Travelling	V. Percheron	52,196
Bags, Travelling	W. Roemer	56,801
Bags, Travelling	E. A. G. Roulstone	59,271
Bags, Travelling	E. A. G. Roulstone	60,256
Bags, Travelling	E. A. G. Roulstone	60,255
Bags, Travelling, Frames for	C. and Z. Walsh	60,448
Bags, Travelling, Frames for	N. Groel	56,930
Bags, Travelling, Frames for	L. Frühinsfeld	57,438
Bags, Woven	C. Moore	56,081
Bag fastener	W. P. Brooks	54,287
Bag fastener	W. H. Brown	56,894
Bag frames	A. J. Session	55,543
Bag frame	W. T. Mersereau	54,191
Bag holder	G. E. Corbin	57,683
Bag holder	C. J. Barney	60,121
Bag holder	C. F. Gillett	56,402
Bag holders	J. V. H. Nott	60,233
Bag holders	C. W. Hills and O. F. Woodruff	52,288
Bag holders	W. H. Starry	59,677
Bag holders	C. F. Gillett	53,809
Bag holders	S. S. Rockwell	53,681
Baggage check	G. C. Thomas	53,360
Bail for kettle and other vessels	A. D Crocker	58,224
Balances, Spring	J. K. O'Niel	54,941
Balance beam for oil wells	J. B. Frazier and H. Wickes	53,434
Balance weights	S. Harris	60,184
Balances	A. T. McDonald	53,020
Bale fastenings	T. B. Bunting	58,018
Balloon, Marine	C. W. Sykes	57,996
Band, Gripe	E. White and J. H. Warren	54,048
Bands, Hat and cap, India-rubber	W. H. Halsey	53,920
Bands, Metal, Perforating	A. Leland	53,228

Invention or Discovery.	Name of Patentee.	No.
Band, Paper collar	G. K. Snow	52,371
Band fastening, Metallic	A. Barbarin	58,574
Bandelore	J. L. Haven and C. Hettrick	59,745
Banjos	G. Mein	57,540
Bank notes, Manufacture of	G. T. Jones	54 834
Bank notes, Preparing, to prevent counterfeiting	G. T. Jones	54,835
Bark, &c., Extracts, Making	F. W. Perry and J. H. Pierce	54,945
Bark, Tanning matter from, Extracting	N. S. Thomas	57,218
Bark upon trees, Splitting, Tools for	E. Micheals	57,542
Barrels, casks, &c	J. Merrill	58,449
Barrels, casks, &c	J. Merrill	58,450
Barrels, casks, and kegs	J. Merrill	58,451
Barrels, casks, and kegs	J. Merrill	55,137
Barrels, Flour	W. H. Towers	54,444
Barrels, Lining, Composition for	H. W. C. Tweddle	57,016
Barrels, Lining, Composition for	A. C. Dunn	55,073
Barrels, Oil, Lining of	R. V. Jones	57,333
Barrels, Plugs for, Making	L. H. Dwelley	59,567
Barrels, Skids for supporting	W. W. Doane and W. P. Burr	58,787
Barrels, Tapping	W. Boynton	56,889
Barrel, Tight, Compressing the cylinders of casks upon their heads to form a.	W. Reid	55,363
Barrel hoops	H. W. C. Tweddle	59,097
Barrel lifters	L. H. Goff	57,819
Barrel head	J. McCammon	52,182
Barrel-head machine	J. S. Thompson	52,772
Barrel machines	P. H. Lawler	57,729
Barrel machinery	H. Baker	58,754
Barrel and casks	M. Hickey	58,821
Barrel or cask	C. H. Carver	57,863
Barrel and keg	J. Merrill	58,452
Barrels from bursting, Safety-plugs to prevent	R. Bridge	52,957
Barrel and gun stock attachment	D. C. Thresher	54,624
Barrels for petroleum, &c	J. S. Lipps	57,738
Barrels and other vessels	J. A. Frey, J. Allen, and G. D. Smith	53,970
Bars or rods, Metallic, Upsetting and forming articles from	M. Seward	59,464
Basket	H. C. Jones	60,383
Basket	G. Z. and W. A. Van Riper	52,914
Basket, Fruit	C. Wheat and C. Bonge	57,024
Basket, Fruit	W. Clements	55,061
Basket, Fruit	J. K. Park	55,530
Basket, Fruit	D. H. Priest	54,594
Basket, Fruit	M. L. and O. A. Stray	59,290
Basket, Fruit	I. C. Gleason	55,851
Basket, Fruit	P. B. Sheldon	54,422
Basket, Willow for, Dressing	M. C. Root, H. and E. Colt	58,958
Baths, Air, Compressed	P. T. Ware	54,655
Baths, Foot	I. A. Isaacs	60,521
Baths, Steam	J. Young	55,194
Bath tubs, Electrical	J. Kidder	51,948
Bats, Spring	G. W. Hill	59,313
Battery, Carbon, Connections for	A. L. Ogden	55,892
Batteries, Galvanic	J. Dixon	57,687
Batteries, Galvanic, Connection for	H. Splitdorf	52,617
Batting and wadding	S. Baxendale	60,324
Bayonet attachment	C. Howard	54,728
Beans, Harvesting, Machine for	D. C. Rosier	58,140
Bean and pea sheller	L. Cutting	53,956
Bean and pea sheller	W. K. Lewis	54,927
Bean thresher and corn sheller	B. P. Pendexter	55,899
Bearing for machinery, Self-oiling and adjusting	T. S. Brown	60,616
Bed, Fracture	M. M. Latta	57,340
Bed, Spring	B. S. Harrington	56,216
Bed, washstand, desk, bureau, and wardrobe, Combined	E. Hambujer	54,718
Bed bottom	J. G. Smith	57,003
Bed bottom	H. G. Seekins	56 278
Bed bottom	J. R. Abbe	54,658
Bed bottom	E. W. Tucker	53,706
Bed bottom	J. Lynn and J. R. Crowell	54,567
Bed bottom	S. W. Beach	54,281
Bed bottom	A. Hitchcock	54,545
Bed bottom	F. Schimming	53,888
Bed bottom	S. A. Canfield	54,292
Bed bottom	D. Spore	59,470
Bed bottom	C. A. Kellogg	56,570
Bed bottom	A. E. Chase	57,039
Bed bottom	J. E. Wilsey and D. Forbes	57,031
Bed bottom	E. M. Payne	57,181
Bed bottom	E. F. Holloway and J. W. Hudelson	57,720
Bed bottom	J. D. Patton	57,560
Bed bottom	E. R. Rison	57,770
Bed bottom	R. L. Hall	58,545
Bed bottom	G. B. and C. B. Davis	58,994
Bed bottom	J. E. Todd	51,981

Invention or Discovery.	Name of Patentee.	No.
Bed bottom	T. Falloon	54, 877
Bed bottom	J. Rouse	54, 779
Bed bottom	J. H. Fletcher	54, 879
Bed bottom	W. Jones	54, 737
Bed bottom	D. W. Burbank	55, 462
Bed bottom	A. R. Henderson and J. Ford	54, 902
Bed bottom	F. B. Duffy	58, 394
Bed bottom	S. H. Crossman	53, 121
Bed bottom	W. J. Haswell	60, 368
Bed bottom	C. M. Brown	53, 519
Bed bottom	C. A. Scott	53, 492
Bed bottom	S. E. Lanphear and H. H. Blair	55, 678
Bed bottom	P. Taylor and W. A. Gove	55, 390
Bed bottom	J. Flinn	56, 740
Bed bottom	H. H. Palmer	51, 856
Bed bottom	W. W. Robinson	51, 866
Bed bottom	R. S. Sanborn	58, 679
Bed bottom	E. Smith, jr., and A. Chase	57, 395
Bed bottom, Spring	A. Cole	56, 373
Bed bottom, Spring	N. J. Willis	52, 937
Bed bottom, Spring	J. E. Wilsey and D. Forbes	56, 844
Bed bottom, Spring	J. Barnes	56, 484
Bed bottom, Spring	J. Barnes	52, 658
Bed bottom, Spring	D. Punchies	59, 649
Bed bottom, Spring	L. L. Tingley	54, 443
Bed bottom, Spring	B. F. Bennett	59, 546
Bed bottom, Spring	D. P. Webster	57, 229
Bed bottom, Spring	T. Linfoot	52, 426
Bed bottom, Spring	C. B. Bristol	55, 574
Bed bottom, Spring	M. Roberts	56, 678
Bed bottom, Spring	A. Frazee and L. W. Smith	56, 741
Bed bottom, Spring	J. and S. Danner	57, 875
Bed bottom, Spring holder for	R. Lapham	59, 799
Bed bottom connection	F. Metz	53, 853
Bedstead	C Perley	52, 879
Bedsteads	H. S. Rose	53, 188
Bedsteads, Bed-bug trap for	S. Clarke	56, 008
Bedstead, Folding	T. Howe	53, 620
Bedsteads, Invalid	W. A. Guyer	56, 211
Bedsteads, Invalid	H. Cordes	56, 376
Bedsteads, Invalid	P. W. Hardwick	54, 533
Bedsteads, Invalid	E. Hutchinson	55, 496
Bedsteads, Invalid	J. H. Gibson	52, 988
Bedstead, Invalid	S. Puffer	53, 041
Bedsteads, Invalid	W. Heath	59, 600
Bedsteads, Invalid	W. S. Hill	53, 533
Bedstead, Lounge	B. Cerf	51, 802
Bedsteads, Mosquito guards for	A. D. Puffer	54, 595
Bedsteads, Sofa	J. F. C. Pickhardt	54, 592
Bedsteads, Sofa	J. S. Kenyon	56, 064
Bedsteads, Sofa	F. Boeger	52, 020
Bedsteads, Spring	S. H. Tift	58, 914
Bedsteads, Spring	J. B. McClanathan	52, 585
Bedsteads, Spring	R. Lapham	55, 680
Bedstead fastening	C. M. Gilbert	53, 972
Bedstead fastening	J. Lemman	58, 437
Bedstead fastening	W. H. Elliot	59, 825
Bedstead fastening	W. H. Elliot	59, 795
Bedstead fastening	W. H. Elliot	59, 794
Bedsteads to apartments, Application of	J. P. Brown	58, 590
Bedstead and table	S. S. Burr	60, 339
Bedstead and wardrobe	L. Wing and D. Myers	55, 568
Beehives	W. H. Pierson	58, 881
Beehives	L. C. Bristol and C. T. Alverson	58, 585
Beehives	E. N. Kingsley	57, 924
Beehives	L. and M. Taylor and E. Cox	52, 622
Beehives	H. Hodgson	52, 571
Beehives	G. W. Merchant	58, 276
Beehives	A. E. Ellis	58, 624
Beehives	T. W. Peirce	53, 475
Beehives	M. D. Mulford, jr	56, 782
Beehives	J. B. Child	53, 785
Beehives	L. W. and S. W. Albee	57, 272
Beehives	J. Wash	56, 127
Beehives	J. J. Justin	56, 230
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Beehives	M. Guthrie	59, 593
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Beehives	T. F. Bingham	59, 169
Beehives	J. Bradt	55, 998
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Beehives	J. H. Starr	59, 471
Beehives	G. Graffham	56, 551
Beehives	A. Fuller	54, 325

Invention or Discovery.	Name of Patentee.	No.
Beehives	J. E. Finley	59,377
Beehives	W. T. Eisenhart	59,569
Beehives	H. A. Tozier	58,697
Beehives	S. Taylor	58,696
Beer faucets	E. Sirret	53,692
Beer, Alcohol, &c., Cooling and condensing	J. Trageser	55,746
Beer, Cooling	H. Renseh	60,059
Beer, Cooling	W. Rose	53,682
Beer, Cooling	A. Fiseher	53,285
Beer, Lager	J. Schneider	56,453
Beer, Making	J. S. Bressler	53,078
Beer, Preserving	A. F. W. Neynaber	55,151
Beer, Preserving while on draught	D. Wernz	59,690
Bells, Call	H. A. Thompson	55,392
Bells, Call	H. H. Abbe	51,784
Bells, Car	J. Sweeney	60,083
Bells, Door	W. H. Watrous	53,366
Bells, Door	W. H. Niehols	52,365
Bells, Door, and burglar alarm	E. H. Crane	55,823
Bells, Door, and burglar alarm	D. L. Collins	59,820
Bells, Gong	I. A. Bevin	58,580
Bells, Hanging	E. W. Van Duzen	59,098
Bells, Hanging	G. E. Baker	56,160
Bells, Hanging	E. W. Van Duzen	59,099
Bells, Harness	C. T. Liebold	52,058
Bells, Harness	R. Schmidt	56,277
Bells, House	A. Turnbull	55,558
Bells, House	H. Barton	58,576
Bells, Sleigh	A. G. Bevin	60,613
Bells, Smoke	J. S. and T. B. Atterbury	57,063
Bell, Table or call	A. W. Turner	52,344
Bellows	E. Field	56,199
Bellows	J. Bowden	56,335
Bellows, sand	J. W. Hendley	56,558
Belt clasp	O. Kromer and C. Ohlemacher	59,914
Belt coupling	W. Leas	52,178
Belt coupling	W. Leas	56,767
Belt fastening	S. J. Sherman	60,579
Belt guides	L. R. Jenkins	57,917
Belt lacing, Cutting	B. F. Sanborn	57,976
Belt stretcher	S. Rogers	51,970
Belting, &c., Clasps for	G. F. White and H. Chamberlain	59,332
Belting, Lap joints for	H. Underwood	58,004
Belting for machinery	S. M. Allen	53,095
Belting, hose, &c., Manufacture of	W. M. Torrey	56,292
Bench, Carpenters'	R. McConnell	58,858
Beneh for clothes wringer	S. A. Bailey	53,099
Bevels, Protracting	W. W. Braneh, jr.	53,397
Beverage	G. Beck	55,983
Beverage	E. G. Holland	55,106
Beverage	C. Sussegger	55,737
Beverage	H. Smith and H. F. Snow	56,458
Beverage	J. H. Kenyon	53,834
Bill-holder and pen-rack	C. P. Crossman	58,716
Billiard cue	G. Bevitt	52,128
Billiard cues, Clamps for gluing the tips on	S. Gessinger	60,505
Billiard game-keeper	G. Miller and J. Reichert	57,443
Bill ard indieators	M. Gootman	52,041
Binding, Corded, for India-rubber and other fabrics	C. A. Ensign	56,393
Binding, Metallic	T. B. De Forest	59,895
Biscuits, Seroll	A. Exton	52,036
Biscuit-machine, Seroll	A. Exton	52,278
Bits, Auger, Making	W. W. Grier and R. H. Boyd	54,893
Bits, Bridle	S. M. King	56,762
Bits, Bridle	S. D. Arnold	56,872
Bits, Bridle	F. N. Frost	56,923
Bits, Countersink	H. C. Lewis	60,217
Bits, Curb	W. C. Baker	52,125
Bits, Upper-jaw	F. B. Carleton	59,178
Bit-braces	O. Peck	54,650
Bit-holders for braces	J. P. Gordon	52,042
Bit stock	W. W. S. Orbeton	59,254
Bit stock	A. W. Smith	51,874
Bit stock	O. Ellsworth	58,234
Bit for boring holes	C. F. Kimball and A. Parsons	52,174
Bits in braces, securing	W. Wimmer	54,990
Blacking	G. W. Corey	52,391
Blacking	W. F. Quimby	57,567
Blacking	J. McCrellish	59,851
Blacking, Stove, Cutter for	W. W. Armington	53,724
Blacking box	T. H. Spencer	57,401
Blacking case and boot-jack	B. Douglas	58,230
Blacking case and night chair, Combined	J. H. Doughty	56,535
Blacking for harness	S. Sherwood	54,616

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Blaeking for leather harness, &c	T. James	55, 203
Blaeksmith's forging apparatus	L. and I. Andrews	60, 458
Blanks for horseshoes	H. J. Bachelder	59, 755
Blasting	N. Cadwallader	55, 055
Blasting, Mining and artillery	T. P. Shaffner	60, 572
Blasting, Plug for	G. H. Felt	52, 836
Blasting with nitroleum	T. P. Shaffner	60, 573
Bleaehing fibrous substance	J. Short	52, 250
Bleaching oil, paraffine, wax, &c	C. Adams	52, 509
Bleaching pulp and drying paper	L. Dodge	56, 732
Bleaehing stained cotton	J. A. Meany	53, 646
Blinds, Boring	J. H. Gibbs	52, 409
Blinds, Butts for	O. S. Garretson	55, 643
Blinds, eurtains, and maps, Hanging	J. F Landis	52, 577
Blinds, Slats for, Planing machines for eutting	M. Free	55, 415
Blinds, Window	L. W. Chase	53, 412
Blinds, Window	E. B. Hungerford	52, 854
Blinds, Window	W. F. Redding	56, 267
Blinds, Window	A. P. Smith	56, 282
Blinds, Window	S. W. Merrill	54, 385
Blinds, Window, Fastening for	F. A. Makepeace	58, 441
Blinds, Window, Fastening for	J. Luther and A. Marsh	60, 210
Blinds, Window, Fastening for	H. Munroe	58, 461
Blinds, Window, Opening and closing	S. W. Woodward	54, 077
Blinds, Window, Operating	H. Smith	52, 332
Blinds and window, Fastenings for	G. L. Reynolds	53, 339
Blind fastener	H. M. Clark	55, 577
Blind fastener	G. T. Smith and W. E. Sparks	60, 584
Blind fastener and operator	J. Aborn	54, 996
Blind fastening	C. A. Palmer	52, 442
Blind slats, Fastening	W. Palmer	60, 545
Blind slats, Making	E. K. Thomas and H. H. Andresen	53, 899
Blind slats, Tenoning	J. M. Seymour	54, 222
Blind slats, Wiring	E. F. Dunaway	52, 276
Blind splint machines	J. A. Welsh	52, 473
Blind and shutter fastening	C. H. Gilman	53, 601
Blocks, Hook for davit fall	W.R. Satterly	58, 142
Blocks, Strapping	A. G. Wolf	59, 496
Block and tackle cheek	D. C. Guttridge and W. F. Rogers	57, 316
Blocks for polishing and glazing wateh hands	G. Hastings	55, 099
Blotter, ruler, and paper eutter, Combination of	L. Katen	53, 833
Blotting pad	D. Walker	59, 933
Blowers	H. B. Bigelow and Geo. Murray	56, 165
Blowers	J. A. Evarts	60, 350
Blowers, Crossheads for	P. H. and F. M. Roots	56, 614
Blowers, Rotary	F. Hainsworth	53, 609
Blowers, Rotary	P. H. Root	58, 745
Blowers, Steam	J. Simmonds	53, 087
Blowers, Steam	A. K. Rider	52, 206
Blowers, Steam	J. H. Johnson	58, 264
Blowpipe	J. McFarland	58, 118
Blowpipe	F. Shaller	60, 070
Blowpipe	O. A. Moses	57, 362
Blowpipe, Self-acting	M. Pinner	53, 181
Blowpipe and soldering lamp	J. S. Hull	56, 051
Boats, Apparatus for propelling	M. Vergnes	57, 798
Boats, Canal, Decks for	A. A. Bissell	59, 171
Boats, Detaehing	S. Brown and L. Level	60, 133
Boats, Dredging, Harbor	W. H. Nobles	55, 346
Boats, Dredging, Steam	W. H. Nobles	55, 347
Boats, Fishing, Self-adjusting pulley for	W. Woodbury	52, 634
Boats, Floats for, Collapsible	J. McDonough	53, 461
Boats, Life	W. Hughes	56, 855
Boats, Life	G. H. Tier	57, 012
Boats, Life	H. Hensey	57, 633
Boats, Life	H. Goulding	58, 810
Boats, Oyster, Dredge rollers for	C. T. Belbin	55, 228
Boats, portable	R. Knudson and W. T. Lassoe	55, 675
Boats, Ships', Lowering	S. Brown and L. Level	55, 053
Boats, Submarine and torpedo	S. S. Merriam	58, 661
Boats for travelling on ice	J. B. Halsey	58, 815
Boats from their davits, Detaching	T. Huntington	55, 303
Boats from their davits, Detaehing	E. H. Sheffield and E. P. Palmer	53, 928
Boats from their davits, Disengaging	E. Oliver and G. Myers	53 530
Boats from their davits, Lowering and detaehing	C. H. Bamsten	59, 153
Bobbins, Weft	O. Pearl	53, 665
Bobbins for spinning	L. Ferguson	54, 465
Bobbins for spinning, &c	B. Webber	51, 887
Bobbins for spinning maehine	C. T. Smith	58, 903
Bodies, Dead, Preserving	J. Kunsman	55, 013
Body conformators	S. O. Brigham	56, 892
Boilers, Brewers', Coils for	J. Trageser and J. G. Schriber	55, 747
Boilers, Culinary, Steamer for	F. W. Bacon	57 244

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Boilers, Gauges for	C. L. Frink	55, 638
Boilers, Guard plate for	A. O'Neill	52, 806
Boilers, Incrustation from, Removing	C. McKee	58, 660
Boilers, Incrustation from, Removing	N. S. Thomas	57, 219
Boilers, Injectors for	J. Gresham	57, 657
Boilers, Lard	W. Branagan	59, 350
Boilers, Open, Setting of, and flues, Improvement in	J. Chilcott	51, 922
Boilers, Packing straw into	H. B. Meech	57, 947
Boilers, pipes, &c., Non-conducting covering for steam	E. H. Ashcroft	59, 338
Boilers, Safety-valves for	C. L. Frink	55 639
Boilers, Steam, Covering	J. Ashcroft	55, 598
Boilers, Steam, Furnace for	J. Chilcott	51, 923
Boilers, Steam, Gauge cock for	J. Holdcraft	55, 079
Boilers, Steam, Incrustation in, Preventing	A. T. Hay	59, 768
Boilers, Steam, Stationary, Setting	C. S. Nelson	55, 958
Boilers, Stove	M. Pratt	60, 419
Boilers, Sugar and other, Preventing incrustation in	A. T. Hay	59, 910
Boilers, Tubes of, Cleaning	D. McDowell	53, 091
Boilers, Wash	M. A. Taylor	56, 830
Boiler explosion, Preventing	A. Arnold	55, 801
Boiler feeders	C. H. Griffin	59, 909
Boiler feeders	W. Bowman	54, 078
Boiler feeders	W. S. and S. B. Wells	54, 798
Boiler feeders, Automatic	G. A. Riedel	56, 096
Boiler feeders, Automatic	E. Quinn	53, 042
Boiler feeders, Automatic	J. R. Widgeon	53, 238
Boiler feeders, Automatic	W. Moore	55, 338
Boiler feeders, Automatic	B. Chalfant	56, 706
Boiler feeders, Automatic	T. J. Sloan	52, 898
Boiler feeders, Automatic	E. Quinn	52, 376
Boiler flanges, Turning	E. Paye	55, 209
Boiler flue brushes	R. King	60, 013
Boiler heads, Cutting oval holes in	J. McBride	57, 533
Boiler heads, Cutting oval holes in	J. McBride	57, 534
Boiler heads, Flanges upon, Forming	J. F. Keeler	54, 920
Boiler heads, Flanges upon, Bending	W. W. Martin	55, 687
Boiler thimble	G. W. Duvall	54, 703
Boiler tubes	B. Fitts	54, 318
Boiler tubes, Cleaning	H. Waterman	53, 203
Boiler tubes, Cleaning, Tool for	S. Van Auken	60, 653
Boiler tubes, Cutting, Tool for	F. Ramsey and J. Miller	58, 886
Boiler tubes, Cutting off, Tool for	N. Thomas	55, 391
Boiler tubes, Cutting off, Tool for	D. M. Nichols	53, 325
Boiler tubes, Scale in, Tool for removing	P. C. Rowe	54, 962
Boiler and furnace	H McClure	58, 552
Boilers and other vessels, Handles to, Attaching	J. H. Brown	60, 337
Boilers and steam pipes, Covering for	E. C. Little	56, 856
Boilers for cooking stoves	E. Bussey	56, 488
Boilers for culinary purposes	F. W. Dembors	53, 421
Boilers for culinary purposes	T. T. Prosser	56, 609
Boilers for culinary purposes	S. E. Saul	54, 964
Bolster plate for wheeled vehicles	O. E. Miles	59, 922
Bolts	G. Havell	52, 570
Bolts, Door	G. T. Allamby	57, 616
Bolts, Door	G. M. Wood	57, 241
Bolts, Flush	J. M. Hopkins	54, 350
Bolts, Keeper for	G. M. Wood	58, 929
Bolts, Making	C. Hall and E. Hubner	53, 531
Bolts, Making	D. E. Adams	58, 040
Bolts, Sash and door	H. T. Woodman	55, 410
Bolts, Slide	J. Decker	57, 249
Bolts, Spring	G. E. Whitmore	55, 187
Bolts, T-head, Dies for making	W. J. Lewis	54, 377
Bolts, Washer for	G. G. Hickman	57, 132
Bolt cutter	O. J Smith	59, 673
Bolt fastening	J. M. Hopkins	54, 348
Bolt fastening for boiler heads	E. Clark	54, 113
Bolt heading machine	A. B. Glover	55, 646
Bolt heading machine	A. Tucker	52, 912
Bolt heading machine	B. Walker	59, 100
Bolt heading machines	C. Hall and E. Hubner	58, 096
Bolt heading machines	F. Schweizer	53, 351
Bolt heading machines	E. Kaylor	55, 501
Bolt heading machines	J. W. McDermott	52, 433
Bolt heading machines	M. D. Marcy	52, 727
Bolt heading machines	L. L. Davis	52, 393
Bolt heading machines	H. E. Anthony	55, 597
Bolt heading machines	L. Kirkup	52, 494
Bolt heading machine	O. C. Burdict	53, 782
Bolt heading machine	J. Minter	56, 247
Bolt heading machine	C. and J. Kane	53, 831
Bolt machine	C. and J. Kane	53, 832
Bolt screwing and nut tapping machine	W. W. Hubbard	52, 415
Bolts and pipes in oil wells, Securing	W. Parsons	52, 594

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Bolts and screws	W. Weaver	52, 631
Bolts for flouring mills	S. Godfrey	51, 939
Bolts for window shutters	E. Childs	51, 803
Bone black, Purifying	T. H. Quick	54, 771
Bone boiling establishment, Disinfecting	D. E. Contarel	57, 093
Bones for manure, Grinding	J. Wister	54, 635
Bonnet, Pressing	G. M. Richardson	58, 555
Bonnet frames	G. A. Cooper and C. Southworth	53, 274
Bonnets and hats, Fabric for	E. Copleston	59, 822
Books, Backs of, Curving	J. E. Coffin	55, 468
Books, &c., Clasp lock for	L. Lall	60, 017
Books, Fronts of, Cutting	I. Jones	59, 229
Book binder, School-boys'	T. Goodrum	58, 940
Book holder	D. I. Stagg	55, 924
Book holder	O. W. Parker	55, 897
Book holder and stand desk	D. I. Stagg	55, 925
Book leaf turner	C. C. Clapp	51, 804
Book mark holder	P. Tomppert, jr	60, 285
Books and manuscripts, Holding	J. E. D. Comstock	56, 184
Boom connection for masts	B. McGrath	55, 515
Boom jaws, Guide for	M. Bray	55, 001
Boots, Balmoral	H. Hayward	51, 944
Boots, Balmoral, Cutting uppers for	H. Hayward	51, 943
Boots, Crimping	O. J. Warren	53, 508
Boots, Cutting	J. Adams	55, 799
Boots, Gaiter	R. B. Jacob	59, 399
Boots, Gaiter, Cutting	A. D. Drew	52, 274
Boots, Lacing	F. Borchardt	52. 954
Boots, Manufacture of	J. J. Christian	57, 289
Boots, Ventilating	S. Perry	57, 371
Boot-blacking apparatus	H. H. Dodge	52, 977
Boot-blacking case	E. S. Carter	53, 111
Boot-blacking ottoman	D. B. Boynton	52, 381
Boot crimp	N. Day	52, 394
Boot heel	J. H. Greenleaf	59, 908
Boot heel	C. Robinson and J. C. Marshall	56, 992
Boot heel	F. Close	58, 067
Boot-jack	A. Pierpont	54, 948
Boot-jack, nut cracker, tack hammer, and tack puller	G. R. Osborn and J. Crandell	54, 008
Boot jack and blacking case	B. Douglas	58, 230
Boot-jack and blacking brush	S. Gessinger	52, 787
Boot tree	W. and A. G. Kelsey	59, 842
Boots and Shoes	W. R. Ethridge	56, 391
Boots and Shoes	O. Pacalin	55, 698
Boots and Shoes	H. P. Stewart	60, 587
Boots and Shoes	H. P. Stewart	60, 588
Boots and Shoes	J. C. Mack	60, 024
Boots and Shoes	C. H. Trask and J. B. Johnson	52, 798
Boots and Shoes	C. H. Southall and R. Heap	52, 802
Boots and Shoes	J. Kimball	55, 671
Boots and Shoes	O. Stoddard	59, 288
Boots and Shoes	J. C. Plumer	51, 968
Boots and Shoes	S. T. Fowler	56, 921
Boots and Shoes	H. Wight	55, 188
Boots and Shoes	A. F. Evory and H. Heston	59, 375
Boots and Shoes, Cleaning	L. M. Newbury	56, 252
Boots and Shoes, Cutting pegs out of	T. Corey	54, 692
Boots and Shoes, Edge plane for	J. C. Grün	52, 845
Boots and Shoes, Head block for holding	I. E. Allen	52, 657
Boots and Shoes, Heel faces of, Dressing	T. K. Reed	52, 883
Boots and Shoes, Lacing for	C. Goodyear, jr	55, 852
Boots and Shoes, Lacing for	C. Goodyear, jr	55, 853
Boots and Shoes, Lacing for	L. A. Sprague	55, 923
Boots and Shoes, Manufacture of	C. M. Gustin	60, 507
Boots and Shoes, Manufacture of	G. Hawkes	55, 858
Boots and Shoes, Piping for	C. Stone	53, 699
Boots and Shoes, Sole for, Inner	I. Newhall	52, 737
Boots and Shoes, Stretching	W. Jones	59, 912
Boots and Shoes, Tips to, Securing	T. H. Jennings	53, 150
Boot and Shoe Heels, Trimming, Tool for	S. C. Bedell	53, 558
Boots and Shoes, Wood for, Preparing	R. T. Havens	54, 339
Boots and Shoes, Wrinkling insteps of	C. Heisterman	59, 219
Boot and Shoe Bottoms, Facing	N. B. Jewett and E. Everson	55, 664
Boot and Shoe-edge Parer	W. Frederick	57, 493
Boot and Shoe Irons	J. Knox	60, 198
Boot and Shoe Stretcher	W. Frederick	55, 637
Borers, Tap	S. S. Crocker	60, 342
Borer, Well	R. R. Lewis	52, 425
Boring apparatus	S. Cary	57, 058
Boring apparatus, Well	S. J. Goucher	52, 642
Boring apparatus, Well	D. Morris	55, 884
Boring artesian wells	D. Wheeler	53, 715
Boring artesian wells	A. Saffer	53, 686

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Boring artesian wells	A. Hamar	54,144
Boring machines	E. Quinn	53,485
Boring machines	B. T. Young	55,945
Boring machines	R. Allison	58,568
Boring machines, Well	C. N. Briggs	52,670
Boring machines, Well	L. J. Crans	51,806
Boring machines, Wood	S. C. Ellis	56,195
Boring machines, Wood	D. Hoit	57,718
Boring oil wells	D. R. Harder	54,148
Boring oil wells	J. H. Clapham	54,656
Boring tools, Coupling shafts of	S. Fawcett	53,219
Boring tools for oil wells	E. C. Dow	52,831
Boring tool for wells	W. B. Trunick	59,482
Boring wells, (previously suspended)	C. Batcheller	51,508
Boring wells	V. H. Lyon	52,868
Boring wells	G. W. Spear	53,054
Boring wells	W. W. Winter and S. Brewer	51,989
Boring wells and laying pipe	D. B. Tiffany	56,502
Boring and grinding apparatus	S. Cary	56.705
Boring and pumping apparatus for oil wells	J. B. Root	58,299
Boring or drilling tools	L. Dow	52,148
Bosoms, Linen, Folding	H. Becbe	52,817
Bosoms, Paper and Cloth	C. Arnold	55,97
Bosoms, Shirt, Fluted puffing for	G. E. King	59,036
Bosoms and collars, Paper	M. Pinner	58,673
Bosoms and collars, Paper	J. C. Arms	55,451
Bottles, Caps for	M. V. Olry	58,281
Bottles, Caster	B. Beach	56,486
Bottles, Corks in, Fastening	G. Bousignes	53,090
Bottles, Cruet	W. Pountney	56,263
Bottles, Fastenings for	H. and J. Wilson	56,653
Bottles, Glass	F. N. Bullard	59,333
Bottles, Glass, Grooving the mouths of	E. Bennett	55,988
Bottles, Glass, Holding	J. Wood	54,991
Bottles, Glass, Tool for holding	E. McArdle	54,572
Bottles, Graduated	G. W. Stoeckel	52,461
Bottle, lamp chimney, or can cleaner	C. N. Pond	56,092
Bottles, Liquor and other, Frame for securing	F. Miller	53,540
Bottles, Mucilage, Cap for	T. N. Hickcox	58,417
Bottles, Printing on	I. L. Miles	56,593
Bottles, Soda Water, Removing wire from	C. M. Dedrick	58,388
Bottles, Stopper for	R. G Pike	54,201
Bottles, Wire from, Removing	J. S. Hazard	58,820
Bottle filler	T. Cochen	55,242
Bottle handle	G. Ireland	52,373
Bottle stopper	N. Thompson	60,283
Bottle stopper	D. T. Robinson	60,424
Bottle stopper	J. Mulchahey	58,174
Bottle stopper	A. Scarlett	52,755
Bottle stopper	S. H. Timmons	58,153
Bottle stopper	E. Morris, jr	52,791
Bottle stopper	A. Barbarin	56,516
Bottle stopper	T. Pimer	55,589
Bottle stopper	F. Catlin	53,948
Bottle stopper	G. W. Rogers	57,382
Bottle stopper	T. W. Mirick	56,079
Bottle stopper	R. S. Connelly	52,269
Bottle stopper	H. B. Fox	55,438
Bottle stopper	J. Beard and M. Fairbanks	56,349
Bottle stopper, caster wheels, syringes, pistons, &c.	R. B. Hugunin	53,002
Bottle-stopper fastener	D. T. Robinson	53,342
Bottle stopper and medicine gauge	S H. Timmons	59,875
Bouquet holder	E. Dithridge	53,279
Box, Annealing	J. C. Lewis	54,376
Box, Ash	J. Kee and J. Sloan	54,172
Box, Axle	H. B. Rowley	60,064
Box, Axle	F. Leppens	59,616
Box, Axle	C. M. Oliver	59,632
Box, blacking and brush, Combined	F. Hatch	60,511
Box, Cartridge	R. C. Bryan and J. H. Bigelow	52,357
Box, Polishing	W. A. Morse	56,781
Box, Bur, for burring machines	Z. Parkhurst	56,257
Box, Car, Railroad	G. F. Lynch	52,181
Box, Car, Railroad	I. P. Wendell	58,927
Box, Cartridge, Revolving	P. F. Schneider	56,804
Box, Check, Detaching	J. P. Conkling	54,866
Box, Cheese	C. Stoll	54,437
Box, Cutting	W. Green	52,992
Box, Dice	E. W. Quincy	60,421
Box, Fare	J. B. Slawson	57,000
Box, Feed, Ration	J. Hayden	56,557
Box, Fruit	J. Shepard and B. B. Lewis	54,614
Box, Fruit	W. H. Earle	58,939
Box, Fruit	T. B. Doolittle	55,631

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Box, Fruit	J. F. Severns	58,899
Box, Fruit	C. Reese	55,709
Box, Fruit, Fastening for	H. T. Barker	55,455
Box, Garbage	J. G. Slevin	55,920
Box, Hat and valise	Z. S. Durfee	58,792
Box, Ice and coal	R. Hagen	57,317
Box, Journal	E. F. Light	52,720
Box, Journal	E. F. Light	57,343
Box, Journal	D. K. Hickok	54,156
Box, Journal, Composition for	G. W. Disman	52,829
Box, Journal, Lining for	P. S. Devlan	59,564
Box, Journal, Lubricating	A. R. Sherman	56,624
Box, Knife-cleaning	C. D. Copeland	53,275
Box, Letter	W. H. Bramble	53,562
Box, Lunch, Folding	C. S. Hurlbut	52,291
Box, Lunch, Folding	J. A. Minor	51,957
Box, Lunch, and canteen	K. Thomau	52,468
Box, Mail-pouch or	M. Smith	54,787
Box, Metal, Sheet	A. Barnes	59,942
Box, Mitre	D. Bull	55,576
Box, Mitre	G. Keating	57,334
Box, Mitre	J. A. McKinstry	59,046
Box, Nut, Adjustable	J. Turner	59,731
Box, Paper	C. A. Maxfield	52,432
Boxes, Paper, Apparatus for making	R. T. Barton	59,944
Box, Paper, Cutting corners of	D. Whitlock	58,183
Box, Paper, Fastening for	G. F. Wright	52,800
Box, Pepper	J. Fallows	54,517
Box, Photographic sensitizing	W. Hudson, jr., and A. L. Hudson	51,834
Box, Pitman	A. S. Acker	57,061
Box, Post-office delivery	J. H. Beid er	57,464
Box, Riffle	R. H. Dunning	58,079
Box, Sand, for locomotive engines	T. Price and J. H. Wilson	53,182
Boxes, &c., Sealing	R. M. Barlett	53,517
Box, Sluice	R. E. Washburn	52,775
Box, Spice	W. A. Miles	58,455
Box, Stuffing	W. Harsen	59,837
Box, Stuffing, Metallic packing for	C. F. Jauriet	52,575
Box, Tally, for measuring grain	A. J. Burke	58,593
Box, trunk, &c., Fastening for	W. S. Paddock	58,467
Box and Brush, Blacking, Combined	W. H. H. Saunders	59,461
Box and cask, Identifying mark for	E. A. Locke	58,847
Box and feed cutter	A. B. King	58,649
Box and journal	W. S. Mead	53,023
Box for cigar fuses	H. Reimann	53,678
Box for propagating plants and vines	F. L. Perry	53,477
Box for putting up caustic alkali	H. Pemberton	60,051
Box for tobacco and matches	T. Huckaus	57,139
Boxes in hubs, Securing	W. Greenleaf	54,529
Brace, Bit-holder for	J. P. Gordon	52,042
Brace, Eyeleting	S. J. Shaw	58,954
Brace, trunk and hinge	J. J. Cowell	56,720
Brace and lacing device	S. J. Shaw and W. E. C. Worcester	58,955
Brace for bits	C. O. Richey	55,364
Brace for wagon springs	J. H. Lockie	60,393
Braiding machine	O. M. Inman	52,573
Braiding machines	L. Hull	58,830
Braiding machines	T. J. Sloan	57,201
Braiding machines	F. L. Veerkamp and C. F. Leopold	56,643
Braiding machines	W. Darker	57,435
Braiding machine, Carriers of	O. E. Drown	55,580
Braiding machines, Let-off mechanism for	J. M. Carpenter	57,084
Braiding machines, Stop-motion for	H. B. Howe and W. J. Mackrell	57,326
Braiding machines, Yarn-delivery apparatus for	C. F. Chambers and S. Robinson	55,239
Braiding machines for making three-strand braid	J. Taggart	52,936
Brakes, Car	L. D. Rundell	59,273
Brakes, Car	S. McCambridge and E. G. Martin	58,115
Brakes, Car	S. H. Timmons	60,284
Brakes, Car	D. Myers	60,228
Brakes, Car	D. Myers	58,877
Brakes, Car	C. W. Singer	58,956
Brakes, Car	L. A. Velu, E. F. & L. E. A. Fossé	60,094
Brakes, Car	N. B. Forrest	56,030
Brakes, Car	J. Davis	55,067
Brakes, Car	G. E. Burt	59,355
Brakes, Car	G. F. Lynch	57,161
Brakes, Car	V. W. Blanchard	53,106
Brakes, Car	D. T. Robinson	53,544
Brakes, Car	W. Warner	53,365
Brakes, Car	J. B. Rumsey	53,235
Brakes, Car	W. H. Killburn	55,670
Brakes, Car	J. Temple	55,964
Brakes, Car	D. Myers	52,310
Brakes, Car	D. Myers	52,311

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Brakes, Car	D. Myers	52,312
Brakes, Car	O. J. Hardgrove	52,848
Brakes, Car	W. E. Wilcox	52,501
Brakes, Car	G. F. Lynch	52,063
Brakes, Car	A. Higley	60,515
Brakes, Car	S. McCambridge	54,573
Brakes, Car	G. H. Henkel	54,152
Brakes, Car	J. W. Gibbs	53,971
Brakes, Car	S. Guilbert	54,333
Brakes, Car	H. H. Trenor	57,015
Brakes, Car	E. Whitehead	56,302
Brakes, Car	J. W. Reid	58,136
Brakes, Car, Electro-magnetic	F. F. A. Achard	59,805
Brakes, Car, Railroad	A. Higley	57,133
Brakes, Car, Railroad	M. Ingersoll	53,006
Brakes, Car, Steam	X. X. Buckner	51,797
Brakes, Horse-power	J. Hull and W. P. Anderson	58,547
Brakes, Railway	E. R. Brown	52,820
Brakes, Sled	H. L. Naramore	57,951
Brakes, Sled	R. B. Dutton	60,348
Brakes, Sled	J. J. Moore	55,522
Brakes, Sleigh	J. R. McAlister	59,244
Brakes, Wagon	J. McQuead	52,731
Brakes, Wagon	C. W. Gage	52,703
Brakes, Wagon	L. C. Perceval	52,595
Brakes, Wagon	J. H. Wilkinson	53,210
Brakes, Wagon	I. and J. M. Gross	59,834
Brakes, Wagon	J. Weathers	57,417
Brakes, Wagon	H. C. Fairchild	58,797
Brakes, Wagon	T. G. Springer	59,285
Brakes, Wagon	G. W. Crowe	57,625
Brakes, Wagon	L. E. Woodard	57,810
Brakes, Wagon	J. S. McGlumphy	57,538
Brakes, Wagon	J. J. Look	60,269
Brakes, Wagon	D. Sager	57,975
Brakes, Wagon	T. T. Wier	58,014
Brakes, Wagon, Self-acting	T. J. Rockey	57,972
Brakes, Shoe, Car	H. Werntz	53,369
Brake and car starter	T. R. Sinclaire	56,810
Brakes for cotton lappers	D. Hussey	58,945
Bran duster	G. H. Reynolds	59,862
Bran duster	J. Richmond	52,886
Bran duster and flour bolts	A. Burbank	53,268
Branding tool	J. P. Worral	52,238
Brazier for cooking stoves and ranges	N. O. Bond	55,519
Brazing and welding	A. J. Hindermeyer	59,222
Bread, Aerated, Apparatus for making	R. L. Howard and J. Danglish	52,252
Bread, Raising, Apparatus for	E. Buss	56,002
Bread, soap, and black lead, Cutting	W. B. Vincent	52,627
Breastpin	L. Sauter	58,894
Breast protector	J. Stadermann and H. Saurbier	60,436
Breeching straps from shafts of carriages, Detaching	E. Calderwood	51,800
Bricks	D. L. Bartlett and G. H. Johnson	57,461
Bricks, Making	I. H. Garretson	56,742
Bricks, Making	T. C. Prosser	56,608
Bricks, Manufacture of	F. Jones	55,667
Bricks, Pressing	W. H. Walrath	58,700
Brick drying press	J. T. Shryock	55,376
Brick machine	B. M. Gard	55,274
Brick machine	C. B. Baker	58,200
Brick machine	A. N. Newton	60,231
Brick machine	W. C. Bartol	60,323
Brick machine	J. Jones	57,919
Brick machine	H. J. Ferguson	57,628
Brick machine	R. A. Douglas	57,689
Brick machine	G. Graezzle	60,175
Brick machine	J. B. Gridley	59,006
Brick machine	A. R. McNair	54,752
Brick machine	I. Gregg and C. Green	55,583
Brick machine	J. S. Elliott	55,841
Brick machine	E. Hallett	57,128
Brick machine	I. Gregg	59,212
Brick machine	J. W. Pease	60,050
Brick machine	J. Hotchkiss	53,223
Brick machine	J. Watson	55,432
Brick machine	I. Morley	55,146
Brick machine	C. Murtha	55,148
Brick machine	E. R. Gard	52,156
Brick machine	E. P. H. Capron	56,703
Brick machine	H. C. Bull	52,674
Brick machine	T. M. Gisbourne	52,801
Brick machine	J. Grant	52,245
Brick machine	P. N. Woliston	55,400

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Brick machine	W. H. Hovey	52,852
Brick machine	T. H. Rodgers	53,879
Brick machine	D. W. Seely and F. Jacobie	54,619
Brick machine	J. Hotchkiss and E. Buss	53,980
Brick machine	E. P. H. Capron and J. F. Winchell	56,847
Brick machine	E. R. Gard	59,831
Brick machine	R. L. Walker	57,415
Brick machine	E. P. H. Capron	54,500
Brick machine	J. Sangster	59,080
Brick machine	J. George and H. Hague	53,600
Bricks for ceilings	M. Abord	57,450
Bricks, or building blocks, Manufacture of	H. W. Angell	60,320
Bridges	T. W. H. Moseley	59,054
Bridges	O. G. Leopold	60,205
Bridges	J. H. Gilbert	58,094
Bridges	Z. King	58,266
Bridges	F. H. Smith	60,434
Bridges	D. Hammond	56,043
Bridges	D. A. Mitchell	56,777
Bridges	L. K. Cole and H. Soule, jr	52,536
Bridges	M. Kremser	52,860
Bridges	F. Monroe	54,004
Bridges, Draw, Hydraulic spindle and turning apparatus for	P. L. Fox and G. P. Herthell, jr	55,844
Bridges, Draw, Railroad, Signals for	A. F. Smith	58,492
Bridges, Truss	G. P. Herthell, jr	59,769
Bridges, Turning	W. N. Berkeley	55,230
Bridges, Turning	W. N. Berkeley	55,231
Bridges, vaults, &c., Cast-iron arches for	G. T. Lape	60,199
Bridge gates, Ferry	L. P. Decker	55,628
Bridges for railroad cars	L. Hempstead and L. S. Hills	57,453
Bridles	A. H. Rockwell	60,254
Bridles	J. C. Haines	56,213
Bridles	G. H. Albright and W. R. Burns	59,937
Bridles	S. B. Hartman	59,596
Bridles	M. Haberbush and E. Krechel	59,996
Bridles, Breaking and training	W. O. Bartlett	55,226
Bridles, Safety	A. M. Christ and H. H. Stehman	52,139
Bridle fronts, Forming	I. Manning	60,531
Bristles, Assorting	N. H. Spafford	59,286
Bristles, Bundling	N. H. Spafford	54,033
Bristles, Combing	N. H. Spafford	54,034
Bristles, Combing	L. F. Lannay and W. F. Parks	54,564
Bristles, Separating	N. H. Spafford	52,763
Bronchial troches	S. C. Henszey, jr	55,292
Bronzing machine	J. K. Lowe	57,527
Broom	D. P. Farnham	54,249
Broom	S. Bennett	51,791
Broom	E. P. Cooley	56,717
Broom	T. Wright	59,733
Broom	J. Wisner	55,409
Broom, Sprinkling attachment for	P. Louis	60,637
Brooms, Wisps for, Preparing	J. E. Phillips	54,591
Broom clamp	T. F. Boyer	53,776
Broom clamp	J. Day	59,977
Broom clamp	A. L. Harwood	54,897
Broom clamp	H. Tilden	55,394
Broom clasp	P. H. Niles	55,345
Broom corn and sorghum stripper	K. W. Doudna	53,126
Broom head	J. C. McLelland and J. Graham	60,030
Broom head	W. D. Stroud	56,119
Broom head	C. Messenger	55,519
Broom head	M. Quimby and J. C. Sturdevant	56,446
Broom head	H. Buck	54,498
Broom head	J. Danner	53,791
Broom head	J. H. Mumma	53,654
Broom head	J. E. Hunter	53,624
Broom head	W. B. Moore	56,434
Broom head	W. Paine and R. E. Caviness	56,461
Broom head	F. G. Bakes	56,162
Broom head	J. H. Lightner	56,067
Broom head	J. W. Keene and W. E. Snediker	56,953
Broom head	W. A. Middleton	56,859
Broom head	M. C. Kilgore	54,559
Broom head	J. Harris	54,338
Broom head	S. B. Guernsey	54,332
Broom head	G. R. Nebinger	54,391
Broom head	J. S. Elkins	53,962
Broom head	J. Buchanan	54,104
Broom head	G. W. Parsons	54,200
Broom head	G. T. Spaulding	54,035
Broom head	S. S. and J. G. Sherman	53,893
Broom head	J. W. Fiester	51,819
Broom head	J. Kiefer	54,921
Broom head	G. W. Parsons	51,964

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Broom head	N. B. Cooper	52, 823
Broom head	H. Buck	52, 263
Broom head	J. E. Short	52, 330
Broom head	H. Trumbull	56, 640
Broom head	J. D. Armbrust	55, 948
Broom head	J. Wasson	55, 936
Broom head	M. Haneline	55, 856
Broom head	J. O. Clay	53, 576
Broom head	N. Hall	53, 296
Broom head	D. P. Myers	53, 323
Broom head	A. B. King	53, 452
Broom head	A. Harroun, jr	57, 320
Broom head	S. S. Evans	55, 843
Broom head	J. Light	55, 316
Broom head	J. W. Golay	55, 769
Broom head	D. Peters	54, 765
Broom head	E. M. Bayne	59, 343
Broom head	T. Moore	60, 038
Broom head	J. Harris	59, 011
Broom head	B. F. Early	59, 372
Broom head	W. P. Brooks	60, 615
Broom head	H. H. B. Vincent	60, 291
Broom head	C. Messenger	60, 221
Broom head	J. Taylor and R. M. Lafferty	57, 988
Broom head, Stocks for	A. D. Forbes	55, 269
Broom head and clamp	M. W. Owens	57, 369
Broom and brush head	G. T. Reed	57, 378
Broom and dust pan	A. Dietz	56, 018
Brush	L. R. Faught	54, 464
Brush	J. C. Lawrence	54, 179
Brush	A. C. Estabrook	55, 764
Brush	J. Boggs	56, 353
Brush, Blacking	N. G. Whitmore	54, 472
Brush, Blacking	C. Mulchahey	60, 226
Brush, Blacking, and Boot-jack	S. Gessinger	52, 787
Brush, Blacking, and Box, combined	F. Hatch	60, 511
Brush, Boiler flue	R. King	60, 013
Brush, Dust and broom	A. Dietz	56, 018
Brush, Fan and rack	B. Poulson	60, 554
Brush, Flexible	R. N. Eagle	52, 833
Brush, Hair, Folding	C. Crosman	54, 695
Brushes, Handle for	A. Aldeu	57, 656
Brush, Paint	J. Marchbank	59, 850
Brush, Paint	E. Hiss	56, 750
Brush, Rotary	S. Stuart	55, 176
Brush, Scrubbing	R. P. Gillett	56, 035
Brush, Scrubbing	B. Figer	56, 025
Brush, Scrubbing	W. C. Cleveland	54, 505
Brush, Shoe	C. F. Moller and C. Latham Sholes	57, 168
Brush, Shoe	E A. G. Roulstone	60, 063
Brush, Shoe	H. E. Schotchmer	53, 689
Brush, Shoe and stove	F. M. Carnes	59, 709
Brush, Steam generator flue	C. and J. Ross	60, 560
Brush, Stencil	D. K. Herr	53, 923
Brush, Tooth	C. Rosefield	54, 604
Brush, Window	J. Stofer	59, 932
Brush and box, Blacking, combined	W. H. H. Saunders	59, 461
Brush and broom head	G. T. Reed	57, 378
Brush for boiler flue	C. H. Bush	55, 815
Brush for cleaning horses	J. Haworth	52, 118
Buckets, Chamber	W. W. Knight	53, 632
Buckets, Elevator	C. Camp	58, 595
Buckets, Elevator	H. Dover and J. Storms	56, 386
Buckets, for wells, Self-tilting	A. J. Cook	55, 062
Buckles	J. N. Plotts	55, 532
Buckles	G. R. Kelsey	55, 311
Buckles	C. S. Cissna	54, 504
Buckles	A. R. Egbert	54, 313
Buckles	C. A. Button	60, 135
Buckles	L. W. Perkins	53, 866
Buckles	H. Loewenberg	54, 928
Buckles	O. L. Hopson and H. P. Brooks	58, 725
Buckles	H. C. Griggs	57, 632
Buckles	J. Peckham	57, 758
Buckles	C. A. Mallory	53, 017
Buckles	W. Welsh	60, 302
Buckles	J. F. J. Gunning and I. T. Meyer	55, 854
Buckles	J. I. Wilkins	54, 803
Buckles	T. B. DeForest	59, 896
Buckles	S. P. Crafts	52, 112
Buckles	E. A. and D. M. Smith	56, 811
Buckles	J. McLellen	56, 590
Buckles	R. E. Frye	52, 154
Buckles	J. Waterman	52, 652

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Buckles	J. N. Plotts	55, 593
Buckles	G. R. Kelsey	55, 311
Buckles	S. S. Hartshorn	52, 568
Buckles	N. Murphy	56, 785
Buckles	A. Hagny	55, 088
Buckles	G. R. Kelsey	55, 113
Buckles	J. N. Plotts	52, 597
Buckles	D. S. Thompson	55, 933
Buckles	L. W. Russell	55, 717
Buckles, Belt	G. R. Kelsey	58, 430
Buckles, Trace	R. J. Algeo	56, 689
Buckles, Trace	W. McK. Thornton	56, 638
Buckles, Trace	J. W. Denton	57, 098
Buckles, Tug	H. Hise	57, 507
Buckle, tug, and hames	L. W. Heelan	57, 899
Buckle clasp	F. D. Ballou	55, 197
Buckle and ring	R. C. Dunham	58, 619
Buckles and straps, Metallic fastenings for	H. H. Mansfield	58, 657
Buggy tops, Shifting	S. S. Meily	55, 690
Bugles, horns, cornets, &c	H. G. Lehnert	52, 580
Buildings, Concrete and mortar walls for	E. Hunt	54, 910
Buildings, Constructing	A. Tanner	59, 732
Buildings, Constructing	F. O. Rogers	60, 425
Building, Moving, Apparatus for	E. H. Avery	58, 970
Buildings, Staging for	W. Arronquier	53, 768
Building block	C. S. Hutchinson	53, 004
Building block or bricks, Manufacture of	H. W. Angell	60, 320
Bullets, Moulding	L. Hebard and W. S. Brown	52, 996
Bullets for small-arms	J. G. DeCoursey	53, 582
Bullion, Refining	J. Reynolds	53, 340
Bung	H. Hufendick and E. Spraugenberg	60, 011
Bungs, Cutting	J. E. Smith	60, 272
Bungs, Cutting, for barrels	J. G. Schmidt	60, 430
Bungs from barrels, Extracting	H. Meyers and A. Webb	56, 431
Bungs for beer casks	M. Hey	54, 904
Bureau, couch, and piano, Combined	C. Hess	56, 413
Bureau, wardrobe, desk, washstand, and bed, Combined	E. Hambujer	54, 718
Bureau and trunk	A. V. Ryder	53, 045
Burial case	G. W. Scollay	52, 756
Burial case	W. K. Miller	57, 545
Burial case	J. L. Lovett, J. Wappich, and J. Wood	52, 865
Burial case, Air-tight	C. Timmerman	55, 555
Burial casket	J. A. Fogg	54, 321
Burner, Aero-gas	W. Jones and M. H. Collins	56, 949
Burner, Coal-oil	T. Wood	56, 655
Burners, Coal-oil, Cooking by	O. F. Morrill	55, 033
Burners, Gas	J. L. Smith	54, 971
Burners, Gas	J. B. Coolidge	58, 606
Burners, Gas	H. Berg and A. Blessing	58, 764
Burners, Gas, Argand	R. Murray and G. Oakes	54, 193
Burners, Gas, Chimney-holder for	E. P. Gleason	59, 588
Burners, Gas, Regulator for	W. Clark	57, 087
Burners, Gas, Regulating attachment for	W. Mallerd	54, 569
Burners, Gas, Ventilating fan for	H. Scher	60, 566
Burners, Hydrocarbon	J. Stratton	53, 383
Burners, Hydrocarbon	M. Herzog and D. L. Cohn	56, 155
Burners, Hydrocarbon, for heating purposes	J. Youmans and J. Reed	60, 455
Burners, Hydrocarbon, for stills, engines, &c	J. Helme	59, 393
Burners, Kerosene	L. C. White	56, 131
Burners, Lamp	J. J. Marcy	60, 215
Burners, Lamp	W. H. Smith	55, 546
Burners, Lamp	T. Hall	58, 097
Burners, Lamp	G. J. Capewell	58, 213
Burners, Lamp	J. F. Sanford	60, 263
Burners, Lamp	J. A. Frey	60, 499
Burners, Lamp	S. W. Wilcox	58, 524
Burners, Lamp	J. F. Sanford	58, 893
Burners, Lamp	J. G. Hunt	53, 623
Burners, Lamp	P. Crans, jr	53, 953
Burners, Lamp	G. J. Capewell	59, 554
Burners, Lamp	R. S. Merrill	56, 245
Burners, Lamp	G. Hillegass	53, 824
Burners, Lamp	A. C. Vaughan	59, 518
Burners, Lamp	J. K. Andrews	59, 704
Burners, Lamp	A. Judson	59, 772
Burners, Petroleum, for cooking purposes	W. H. Smith	51, 876
Burners, Vapor	W. W. Batchelder	57, 276
Burners, Vapor	H. Saroni	57, 578
Burners, Vapor	W. H. Smith	55, 383
Burners, Wick, Tubular	H. W. Dopp	59, 898
Burners, Wick, for heating and cooking	H. W. Dopp	57, 880
Burners for gas stoves	T. H. Brymer	53, 404
Burners for gas stoves	J. R. Clark and S. T. Savage	54, 114
Burners for vapor lamps	J. S. Hull	58, 261

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Burners to lamps, Attaching	W. P. Miller	56, 775
Burning fluid	D. Mansfield	55, 880
Burning fluid	G. L. Fattie	59, 797
Burning fluid	W. Corfield	54, 061
Burning fluid	W. Corfield	54, 060
Burning fluid for illumination, Compouud	H. B. Brace and W. F. Swart	54, 495
Burning liquid hydrocarbous	A. Schpakofsky and N. Stange	53, 763
Burnisher and eraser	S. R. Andres	57, 273
Burnisher and eraser	A. G. Shaver	58, 684
Burnishing machine	N. C. Stow	52, 336
Bur, Knitting machine, Self-lubricatiug	C. Allardice	55, 034
Burring machiués, Bur box for	Z. Parkhurst	56, 257
Bush, Lubricating	S. H. Everett	57, 695
Bustles and corsets, Combined	L. H. Foy	54, 323
Butter, Coloring matter for	D. W. Dake	59, 975
Butter worker	J. Robinsou	55, 716
Butter worker	C. F. Smith	53, 192
Butter worker	R. R. Eastman	59, 985
Butter worker	W. H. Hart	55, 857
Butter worker	J. P. Adams	54, 272
Butter worker and packer	C. F. Barager	58, 971
Butter worker and mould	T. D. Smith	56, 112
Butter from cheese whey	H. C. Markham	60, 399
Butter from whey, Mauufacture of	J. Suggett	60, 656
Buttons	F. I. Palmer	53, 471
Buttons	C. E. Richards	52, 608
Buttons	R. N. Eagle and C. D. Smith	57, 101
Buttons	C. F. Spencer	59, 090
Buttons	E. A. Robiuson	57, 260
Buttons	P. F. Mauvas	60, 217
Buttons	A. W. Browne	58, 332
Buttons	A. M. Smith	58, 311
Buttons	A. Selkirk	53, 086
Buttons	C. Robitaille	54, 017
Buttous	J. B. Rumsey	54, 022
Buttons	C. A. French, 2d	54, 324
Buttons	D. Howorth	54, 549
Buttons	F. Douglas	53, 796
Buttous	C. M. Platt	56, 261
Buttons	J. M. Johnson	54, 736
Buttons	J. M. Johnson	53, 986
Buttons, Chuck for holding	E. Russell	60, 258
Buttous, Covered	N. C. Newell	57, 555
Buttons, Fastenings for	J. Johnson	54, 556
Buttons, Fastenings for	J. M. Johuson	60, 194
Buttons, Glass, Pressing	T. Guilford	53, 816
Buttons, Grinding and polishing	G. J. Capewell	57, 471
Buttons, Makiug	W. Kraemer	59, 234
Buttons, Making	L. D. Phillips	60, 053
Buttons, Swivel	E. H. Porter	53, 333
Buttou attachment for apparel	I. Lewine	55, 798
Button hole	C. D. Smith	57, 202
Button hole	E. F. Dieterichs	56, 190
Button hole, Cutting and reinforcing	J. T. Bruen and G. M. Jacobs	59, 957
Button holes, Making	F. Liudner	58, 654
Button-hole cutter	W. Lieber	57, 342
Button-hole cutter	G. H. Seymour and W. B. Barnard	57, 384
Button-hole patches for paper, Self-sealing	T. Griffin	57, 314
Button holes for carriage curtaius, Elastic	S. C. Talcott	59, 679
Button holes for paper collars	B. F. Porter	52, 599
Buttou and hook, Combined	W. H. Shurtleff	55, 431
Button and loop for traces, Combined	J. Albert	58, 195
Button to garments, Sewing	J. W. Roberts	56, 612
Buttons to fabrics, Securing	G. Rehfuss	52, 884
Buttons to fabrics, Securing	G. Rehfuss	52, 885
C.		
Cabinet, College	W. W. Levering	60, 529
Cabinet, Culinary	J. Billings	53, 260
Cables, Chain, Adjusting	C. Hall	57, 127
Cables, Telegraph	S. T. Field	53, 430
Cables, Telegraphic	J. Story	53, 700
Cables, Telegraphic	P. A. Salvotti	53, 047
Cables, Telegraphic	J. N. Phelps	59, 318
Cable stopper	P. Murray	55, 343
Cable stopper or chain hook	E. Davidson	52, 392
Cage, Bird, Musical attachment to	G. Gunther	56, 407
Cages for hoisting purposes in mines	H. Berry, H. Hochholzer, and F. Denver.	54, 490
Cake baker, Griddle	J. Mull	53, 744
Cake lifter and fork	P. L. Snine	60, 650
Calculating machine	N. Rowland	51, 972
Calculators for scales, Automatic	J. Johnson	57, 332

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Calendars	W. P. Ware	56, 470
Calendars, Perpetual	H. Harris	56, 935
Calendar and inkstand, Combined	G. G. Percival	56, 603
Calipers	P. Soper	57, 588
Calipers and compasses	F. P. Pfleghar and W. Schollhorn	51, 967
Calipers or dividers, Making	J. B. Gooding	56, 323
Calks for horseshoes	F. Judson	54, 918
Calves, Weaning, Pens for	J. B. Dow	53, 589
Camera, Vertical solar	L. F. Morawetz	59, 438
Camera, Solar	W. H. Masters	59, 917
Camera, Solar	J. B. Blair	60, 129
Can, bottle, or lamp-chimney cleaner	C. M. Pond	56, 092
Cans, Fruit	L. J. Wicks	59, 111
Cans, Fruit	B. F. Ells	56, 390
Cans, Fruit, Expanding frames for soldering	J. K. Cook	56, 531
Cans, Fruit, Fastening for	G. H. Hammer	55, 953
Cans, Fruit, Opening	W. W. Lyman	54, 929
Cans, Fruit, Sealing	E. H. and J. M. Bruee	59, 816
Cans, Fruit, Self-sealing	T. Parker	60, 547
Cans, Fruit, Tin	J. M. Francis	55, 845
Cans, Fruit, Tops for	A. Stewart	58, 502
Cans, Fruit, and other vessels, Sealing	W. K. Lewis and J. W. Bailey	54, 182
Cans, Manufaeture of	J. T. Ackley and J. H. Truax	53, 765
Cans, Metal, Sheet	G. F. Stone	53, 751
Cans, Metal, Sheet	E. T. Covell	52, 972
Cans, Metal, Sheet, Opening	S. P. Chapin	56, 368
Cans, Milk	R. C. Wickham	60, 603
Cans, Milk	E. Abbott	58, 194
Cans, Milk	N. P. Barnes	53, 256
Cans, Milk	I. F. Van Duzer	55, 791
Cans, Milk	J. Q. Davis	52, 691
Cans, Milk, Handles for	C. Millar	53, 649
Cans, Oil	W. C. Newkirk	60, 409
Cans, Oil	S. Sargent	60, 429
Cans, Oil	W. J. Prall	59, 066
Cans, Oil	J. Ashton	55, 975
Cans, Oil	G. L. Holt	54, 250
Cans, Oil, Lubricating, and lamps	E. Ashcroft	60, 117
Cans, Oil, and oilers	J. E. Weaver	58, 157
Cans, Opening, Tool for	E. T. Orne	59, 513
Can, Preserve	C. F. Stilz and J. C. Knoepke	57, 212
Cans, Screw mouth-piece to, Applying	H. O. Lathrop	57, 524
Cans, Tin, Opener for	E. T. Orne	53, 173
Cans, Tin, Opening	J. Willard	57, 422
Cans, Tin, Opening	J. Osterhoudt	58, 554
Cans, Tin, Opening	W. H. Baldwin	54, 668
Cans, Tin, Soldering	P. H. Niles	54, 195
Cans, Tin, for fruit	A. Kollenberg	54, 923
Cans, Water, for railroad cars	L. T. Richer	53, 748
Cans for caustic alkalies	E. A. Thomas	54, 230
Can opener	O. J. Livermore	55, 878
Canal propulsion, Device for	G. Stackpole	53, 088
Canelling apparatus	T. S. Hudson	59, 225
Candles, Paraffine	H. Ryder	59, 749
Candle holder	J. Vereh	56, 293
Candle moulding, Tubular plunger for	H. Ryder	59, 460
Candlestick	A. Rix	58, 296
Candle and lamp stand and holder	G. Utley	57, 017
Candy, Manufacture of	H. C. Wilkins	53, 913
Caneholder	H. Nitzsche	57, 367
Cane juice, Defecating	L. Reid and D. Lyman	60, 243
Cane juice, Defecating	L. Reid and D. Lyman	60, 244
Cane juice, Defecating	L. Reid and D. Lyman	60, 242
Cane juice, Defecating	L. Reid and D. Lyman	60, 245
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Cane juice, Gum from, Separating	H. Gortner	58, 095
Cane juice, Treating	J. E. Pattison	57, 958
Cane stripper	J. A. Hall	53, 818
Cane stripper	W. N. Barr	58, 049
Cane stripper and knife, Combined	R. Conarroe	56, 009
Cane, Stripping	D. C. Flint	54, 880
Cane and umbrella, Combined	P. T. Brownell	53, 778
Canisters, Measuring stopple for	W. M. Smith	58, 311
Canteen and lunch box	K. Thoman	52, 468
Canvas, Stretcher for	J. B. Flagg and G. Storer	58, 627
Canvas, Stretcher for	C. Dowd	55, 579
Caoutchouc, Artificial	A. G. Day	58, 615
Cap	S. Goldstone	57, 702
Cap, Expanding	Ohl G. Adan	52, 068
Caps	C. and F. Stattmann	59, 092
Caps, Percussion, Trimming	J. H. Fowler and J. Freuch	56, 492
Caps, Percussion, Varnishing and lining	W. A. McIntire	52, 435
Caps and hats	W. H. White	54, 049
Cape, muff, and victorine, Combined	D. Isaaeson and A. Cohn	59. 227

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Carpet holder	E. Shopbell	55, 170
Carpet stretcher	C. A. Linnder	58, 653
Carpet stretcher and tack holder	F. Ashley	58, 751
Capstan	W. D. Grimshaw	60, 505
Capstan	J. Edson	57, 302
Capstan, Winch	D. Knowlton	55, 673
Capstan, Working, by steam	J. S. McMillen	52, 730
Capstan and windlass	D. N. B. Coffin, jr.	59, 969
Cars, Coal, Drop-doors in, Fastening and unfastening	W. Burt	60, 340
Car, Dumping	E. H. Jackson	56, 756
Car, Dumping	J. Braidwood	56, 518
Cars, Dumping, for coal mines	M. G. Smith and W. G. Stephens	58, 736
Cars, Grain, Unloading	D. J. Whittemore	58, 928
Cars, Marine	A. Blanquist and C. Crook	56, 351
Cars, Marine	G. H. Young	56, 660
Cars, Ore and timber, for mines	G. Williams	56, 480
Cars, Railroad	E Miller	56, 594
Cars, Railroad	J. R. Reader	59, 652
Cars, Railroad	R. T. M. Wells	56, 301
Cars, Railroad, Automatic blast for carburetters in	E. S. Hutchinson	59, 226
Cars, Railroad, Iron	S. Merrick	58, 448
Cars, Railroad, Transmitting power by means of	C. Foster	57, 112
Cars, Railroad, Roofs for	W. H. Myers	57, 173
Cars, Railroad, Unloading	J. Dable	56, 906
Cars, Railroad, Ventilating	H. J. Ruttan	52, 009
Cars, Railroad, Ventilating and heating	T. H. B. Sanders	55, 168
Cars, Railway	E. H. Ashcroft	54, 662
Cars, Railway	G. and G. T. Benjamin and H. S. Weston	60, 465
Cars, Railway, Head rest for	P. A. La France and J. D. Dinsmore	57, 926
Cars, Railway, Horse, Pole for	D. T. Robinson	60, 250
Cars, Railway, Running gear of	S. B. Childs	58, 216
Cars, Railway, Street, Extension holding straps for	T. Cogswell	53, 116
Cars, Railway, for preventing accidents	F. W. Jenkins	55, 663
Cars, Sleeping	B. Field	56, 853
Cars, Starting	W. H. Butler and R. G. Hatfield	55, 464
Cars, Stopping and starting	J. E. Kelsey	54, 363
Cars, Street, Propelling	J. W. Conway	57, 623
Cars, Street, Starting	T. F. Kums and W. W. Burson	57, 925
Cars, Weighing	J. H. Zinn	55, 946
Cars, Wooden mat for	W. Groat	55, 489
Cars, Wrecking	G. Herrick	57, 323
Car box, Railroad	G. F. Lynch	52, 181
Car box, Railroad	I. P. Wendell	58, 927
Car replacer	G. Chambers	60, 137
Car seat, Railroad adjustable	W. N. Bragg	58, 713
Car seat indicator	F. H. Carney	58, 771
Car starter and brake	T. R. Sinclaire	56, 810
Car truck standard	W. T. Altfather	59, 337
Cars for transporting petroleum	J. and A. Densmore	53, 794
Cars for transporting petroleum	J. Densmore and G. W. N. Yost	55, 832
Cars for transporting petroleum	J. Densmore and G. W. N. Yost	55, 830
Cars for transporting petroleum	J. Densmore and G. W. N. Yost	55, 831
Cars on the track, Moving	J. W. Pettengill	58, 285
Cars on springs, Suspending	A. Bridges	55, 457
Cars on railways, Propelling	C. T. Harvey	54, 537
Caramel, Dry, Manufacture of	T. Hyatt	53, 249
Carbon battery connections	A. Z. Ogden	55, 829
Carbon oil fire tester	G. E. Shaw	56, 107
Carbonate of soda, &c., Manufacture of	H. M. Baker	55, 600
Carburetters	F. S. Pease	59, 446
Carburetters, Automatic feed for	E. S. Hutchinson	58, 422
Carburetters, Feeders for	E. M. Smith	59, 142
Carburetters and gas machines, Safety apparatus for	J. F. Boynton	58, 055
Carburetters in railroad cars, Automatic blast for	E. S. Hutchinson	59, 226
Carburetting machines, Air in, Forcing	J. F. Birchard	54, 491
Cards, Computation, Sliding slate for	G. N. Jackson	56, 943
Cards, Writing and drawing	H. A. Clark and H. A. Griswold	56, 903
Cards for carding machines	E. Waite	54, 450
Cards for carding machines	W. Turner, S. Shore, and W. Halliwell	54, 270
Card case	F. A. Lamontagne	58, 270
Card holder	A. A. Marks	58, 357
Carding engines	J. McDonald	55, 881
Carding engines, Operating the doffer comb of	A. A. Bennett	55, 046
Carding engines, Stripping top flats of	S. L. Crockett and B. S. Mills	58, 989
Carding engines, &c., Wool oiling machinery for	C. Jones	56, 758
Carding and picking machines, Roller feed for	J. Dempster	55, 828
Carding and wool burring machines, Cylinders for	C. L. Goddard	56, 038
Cargoes of vessels, Removing	J. Manderson and S. Farringer	52, 001
Carpet, Fabric for, and for other purposes	T. Crossley	52, 825
Carpet-bag frame	C. and Z. Walsh	57, 262
Carpet-bag frame	G. Havell	52, 290
Carpet-bag frame	P. Born	56, 168

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Carpet-bag frame	A. Sonnekalb and J. W. Lieb	57,399
Carpet bags	A. Sonnekalb and J. W. Lieb	52,902
Carpet-cleaning machine	W. McArthur	57,532
Carpet fastener	R. A. Gawler	59,002
Carpet fastener	J. H. Frederick	52,985
Carpet fastener	W. Weaver	59,298
Carpet fastening	C. Gullmann	57,895
Carpet lining	J. F. Fales	52,835
Carpet lining	G. W. Chipman	60,476
Carpet stretcher	G. Mosman	51,853
Carpet stretcher	J. Kaily	59,129
Carpet stretcher	E. W. Twing	55,935
Carpet stretcher	H. Hungerford	58,831
Carpet stretcher	J. B. Martindale	60,216
Carpet stretcher	J. H. Bosworth	60,469
Carpet stretcher and hammer	F. M. Osborn	55,154
Carpet wadding	T. H. Dunham	54,312
Carriages	J. D. Van Hoevenberg	60,093
Carriages	L. Kutcher	60,016
Carriages	G. H. and E. Morgan	59,526
Carriages	G. H. and E. Morgan	59,525
Carriages	J. J. Morris	57,545
Carriages	U. Reynolds	54,410
Carriages	C. T. Bush	53,568
Carriages, Axle boxes for, Self-lubricating	S. S. Putnam	59,779
Carriages, Body top for	U. Reynolds	58,292
Carriages, Bow irons for	H. M. Bidwell	52,016
Carriages, Breeching straps from shafts of, Detaching	E. Calderwood	51,800
Carriages, Children's	A. Christian	54,111
Carriages, Dress guard for	G. W. Raitt	58,885
Carriages, Hold-back for	E. Wilson	59,494
Carriages, Poles and thills for	J. G. Perry	53,478
Carriages, Propelling	C. K. Bradford	53,214
Carriages, Propelling, Spring power for	W. K. Chase	53,572
Carriages, Releasing horses from	J. T. Guthrie	51,941
Carriages, King bolt for	J. Phelps	59,642
Carriages, Rub irons for	F. B. Morse	55,692
Carriages, Running gear of	F. Crick	57,094
Carriages, Seats for, Spring	F. M. Hubbard	56,753
Carriages, Steam	M. Fletcher	57,696
Carriages, Step block for	P. F. Hulbert	53,302
Carriages, Thills to, Attaching	W. R. S. Hunter	53,828
Carriages, Thills to, Attaching	S. H. Ward	60,296
Carriages, Thills to, Attaching	M. J. Althouse and R. Reifsnider	59,537
Carriage axle journals, Lubricating	G. W. Parsons	60,049
Carriage bodies, Hanging	H. Scharch	59,081
Carriage bows, Props to, Attaching	L. Sawyer	54,782
Carriage clip	F. B. Morse	52,440
Carriage-curtain fastener	E. Crawford and J. H. Birch	53,419
Carriage doors	L. F. Wood	53,075
Carriage gearing	J. R. McAlister	57,745
Carriage poles	H. W. Painter	57,179
Carriage seat	F. B. Morse	54,755
Carriage seats	B. Hurlburt	59,508
Carriage seats, Shifting rails for	J. Fellows	58,542
Carriage shackle	T. S. Smith	59,728
Carriage shackle	J. H. J. O'Neil	58,465
Carriage shackle	W. W. Knowles	54,253
Carriage thills, Attaching	W. C. Sherman	60,071
Carriage thills, Bending	J. W. Dann	57,294
Carriage tongues, Shackle for	F. R. Pollard	56,606
Carriage tops, Raising and lowering	G. Stover	59,289
Carriage tops, Shifting	A. V. Heyden	59,014
Carriage tops, Shifting rails for	S. Johns	54,169
Carriage tops, Slat iron for	G. W. Traphagan	59,322
Carriage tops	W. F. Rundell	60,066
Carriage-top prop blocks	W. N. Barnett	52,126
Carriage-top protector	R. Nickson	59,056
Carriages and sleighs, Shafts to, Attaching	G. Coffin	59,970
Carrier and elevator, Track-rope hay	E. H. Carpenter	52,676
Cart-harness saddles	H. A. Rains	59,651
Cartridges, Blasting	H. S. Lucas	58,656
Cartridges, Filling	W. C. Dodge and R. D. O. Smith	56,489
Cartridges, Metallic	H. Berdan	52,818
Cartridges, Metallic	H. Berdan	53,388
Cartridges, Metallic	A. S. Blake	55,233
Cartridges, Metallic, Priming	E. Maynard	59,044
Cartridges, Metallic, Priming	T. J. Powers	57,258
Cartridges, Metallic, Priming	T. T. S. Laidley	55,676
Cartridges, Metallic, Priming	T. J. Powers	54,254
Cartridges, Metallic, Priming	T. L. Sturtevant	54,038
Cartridges, Metallic, for loose ammunition	W. H. Riley	53,490
Cartridges, Nippled, for breech-loading fire-arms	T. L. Sturtevant	55,552
Cartridges, Priming	A. Moffatt	53,168

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Cartridges, Priming	T. L. Sturtevant	53,501
Cartridges, Priming	G. A. Fitch	58,800
Cartridge box, Revolving	P. F. Schneider	56,804
Cartridge cases	T. J. Powers	54,255
Cartridge machine	D. Smith	60,074
Cartridge retractor for breech-loading fire-arms	J. W. Cochran	52,679
Cartridge retractor for revolving fire-arms	S. W. Wood	52,105
Cartridge retractor for revolving fire-arms	H. Hammond	52,165
Cartridge shells, Drawing	A. S. Warner	56,332
Cartridge for fire-arms	J. W. Smith	52,370
Cases, Burial	W. K. Miller	57,545
Casks, Applying liquids to	J. O. Woodruff	56,483
Casks, barrels, &c	J. Merrill	58,450
Casks, barrels, &c	J. Merrill	58,449
Casks, barrels, &c	J. Merrill	59,622
Casks, barrels, and kegs	J. Merrill	55,137
Casks, barrels, and kegs	J. Merrill	58,451
Casks, Heads of, Holding	J. D. Leach	57,522
Casks and barrels	M. Hickey	58,821
Casks or barrels	C. H. Carver	57,863
Casks and boxes, Identifying marks for	E. A. Locke	58,847
Casts	Z. Butt	52,963
Casts, Anatomical, Composition for making	J. Hurford	53,225
Cast-iron apparatus for super-heating steam	C. C. Parsons	54,590
Casters	J. M. Riley	57,971
Casters	T. Beach	57,036
Casters, Pepper	L. Soehlmann	58,312
Caster wheels, bottle stoppers, syringe-pistons, &c., Manufacture of.	R. B. Hugunin	53,002
Caster for furniture	J. C. Plumer	55,358
Caster for furniture	W. Johnson	55,665
Caster for furniture	J. A. Wiedersheim	58,523
Caster for furniture	J. T. Barnes	59,163
Caster for furniture	F. G. Ford	58,999
Caster for furniture	H. Naylor	58,879
Caster for furniture	T. M. Kane and C. Brown	52,420
Caster for furniture, Attaching	W. B. Bartram	52,257
Castings, Caststeel	J. B. Tarr	57,644
Casting and moulding apparatus	G. Ross	53,883
Catamenial sacks	J. C. Benzinger	57,665
Catch for money drawers	S. Hubbell, jr	53,827
Caterpillars, Embryo, Destroying	A. Casebeer	60,136
Cattle, Watering	O. Whedon	53,207
Cattle gag	W. Kegg	59,035
Cattle hitch	C. H. Sawyer	57,049
Cattle poke	A. H. and H. P. Kennedy	59,408
Cattle tie	H. C. Small	55,727
Caustic alkali	L. Prang	55,158
Caustic alkali, Putting up	T. C. Taylor	52,465
Caustic alkali, Putting up	T. C. Taylor	52,910
Caustic potassa and soda, Putting up and preserving	T. C. Taylor	52,466
Cavalry accoutrements	J. K. Mizner	52,064
Cellar, Draining	A. F. Erich	53,594
Cement	A. S. Jourdan	59,771
Cement, Composition, and as a material for moulding	S. Sorel	53,092
Cement, Roofing	W. Green	55,087
Cement, Roofing	W. H. H. Burnham	59,551
Cement, Roofing	E. Curtis and A. Crozier	52,973
Cement, Roofing	S. B. Moore	60,037
Cement, Roofing	W. Green	56,042
Cement, Roofing	W. L. Potter	56,444
Cement, Roofing	F. M. Buell	56,363
Cement, Roofing	G. Stead	58,499
Cement, Roofing	J. Stow and J. White	58,148
Cement, Roofing	W. B. Wheeler	53,716
Cement, Roofing	W. Green	53,140
Cement, Roofing	J. Darby	57,626
Cement, Roofing, Elastic	A. Doudes	52,978
Cement, Roofing, pavements, &c.	L. De l'Homme and A. Lazzara	59,713
Cement, Spreading	J. H. Pulte	57,764
Cement, Stone and plaster, Manufacture of	F. Ransome	55,545
Cement for leather	B. F. Pettingell	52,315
Cement for leather	A. Leach	59,774
Cement for stone	H. Schneider	51,867
Cementing and gluing machine	M. H. Merriam and E. L. Norton	55,335
Centring and squaring devices	C. O. Gardiner	60,169
Centrifugal machine	J. O. Joyce	57,517
Centrifugal machine	H. Hunt	53,448
Centrifugal machine	A. Mackay and E. Muller	53,463
Centrifugal machine	J. D. Browne	55,461
Centrifugal machine	G. B. Hartson and E. J. Woolsey	52,569
Chains, Elastic	C. E. Richards	54,411
Chains, Stamping, Machine for	P. S. Bishop	54,101

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Chain cable, Adjusting, Machine for	C. Hall	57,127
Chain hook or cable stopper	E. Davidson	52,392
Chain links, Bending	E. L. Keeler	57,043
Chair	M. C. Cronk	54,869
Chair	A. and O. A. Bingham	54,053
Chair	C. C. Schmitt	58,682
Chair	V. R. Parkhurst	54,762
Chair	J. F. Sargent	54,217
Chair	J. Ungerer	58,917
Chair	J. Habermehl	56,554
Chairs, Caning, Needles for	M. E. Hurley	56,421
Chair, couch, and stretcher	J. E. Jouett	59,403
Chairs, Dentists'	J. A. Salmon	55,368
Chairs, Folding	I. M. Dann	52,488
Chairs, Folding	B. J. Harrison and J. Condie	56,410
Chairs, Folding	E. Hambujer	57,709
Chairs, Invalid travelling	C. L. Bander	60,464
Chairs, Night, and blacking case, Combined	J. H. Doughty	56,535
Chairs, Railroad	B. McDevitt	57,943
Chairs, Railroad, Machinery for making	W. Van Anden	58,155
Chairs, Railroad	J. W. Wetmore	54,236
Chairs, Railroad	J. W. Sutherland	52,005
Chairs, Railway	H. Carpenter	59,180
Chairs, Railway	A. Hamill	55,650
Chairs, Railway	N. Headington	59,218
Chairs, Railway	J. W. Draper	57,816
Chairs, Railway	D. W. Crocker	54,868
Chairs, Railway	T. Whittemore	58,184
Chairs, Railway	N. L. Davis and R. O. Hewitt	56,726
Chairs, Reclining	J. Kline and A. Schmacker	57,153
Chairs, Reclining	G. Hunzinger	52,416
Chairs, Reclining	J. B. Duane	58,231
Chairs, Recumbent	D. B. Hall	58,343
Chairs, Rockers for, Detachable	W. Pinkerman	52,741
Chairs, Rocking and fan	G. Fleig	52,404
Chairs, Seats and backs for	W. S. Farmer	54,314
Chairs, Seats and backs to	T. Carré	54,828
Chairs, Sheep	C. W. Saladee and J. R. Moore	60,262
Chair, sofa, and car seats	J. W. Cochran	54,863
Chair, stool, and cradle	J. B. Warren	55,401
Chair, Swinging	E. Marx	57,255
Chair seats	A. Bingham	55,605
Chair and cradle	A. Berney	55,990
Chair and cradle, Combined	F. E. Coomes	56,718
Chair and crib	J. E. Small	59,087
Chair and desk, Combined	W. A. Ehlman	56,540
Chair and fan, Combined	F. Handschuh	56,214
Chair and table, Baby	J. Kopp	60,389
Chair and walker for children	G. Holtz	54,546
Chair for photographic purposes	C. G. Pease	53,038
Chalk line winder	J. H. Rose	59,268
Chambers, Vacuum, Medical	G. Hadfield	59,388
Changing speed, Device for	J. H. Wait	53,202
Charcoal, Animal, Cleaning	G. A. Jasper	53,534
Charcoal, Making	S. K. Chaffee	56,528
Charcoal for filtering, Preparing	G. W. Ferris	56,198
Charger, Powder flask	C. C. Dickey	52,147
Cheese	J. Budlong	53,777
Cheese, Preparing, for market	L. J. Randoll	53,043
Cheese, Turning	R. Scott	53,048
Cheese cutter	J. Haines	56,212
Cheese vats	L. C. Haines	55,649
Cheese vats	J. A. Carlisle and G. A. Bowers	56,176
Cheese vats	A. G. Bagg	59,941
Cherry stoner	W. Weaver	54,797
Cherry stoner	C. E. Wright	58,531
Cherry stoner	J. W. Thompson	59,321
Chess, Game of battle	C. Richardson	60,247
Chessboards	F. C. Schaefer	52,891
Chest, Medicine	E. M. Skinner	59,086
Chimneys	C. W. Saladee and T. R. Eddy	58,892
Chimneys, Heater for	T. M. Aspinall and S. H. Whitlock	53,770
Chimneys, Lamp	P. Hagan	59,389
Chimneys, Lamp	E. O. Schartan	56,999
Chimneys, Lamp	G. L. Witsil	55,436
Chimneys, Lamp	V. W. Brown and D. Frankish	55,054
Chimneys, Lamp	H. C. Appleby	55,450
Chimneys, Lamp	A. Judson	56,952
Chimneys, Lamp, bottle, or can cleaner	C. N. Pond	56,092
Chimneys, Lamp, Cleaner for	W. B. Barnard	57,460
Chimneys, Lamp, Cleaner for	W. J. Johnson	57,149
Chimneys, Lamp, Cleaner for	F. Imhorst	51,835
Chimneys, Lamp, Cleaner for	F. Ashley	59,808

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Chimneys, Lamp, and shade, Combined	J. H. Connelly	56,010
Chimney cap	H. Reynolds	52,322
Chimney cap	W. H. Horton	53,301
Chimney cap	J. H. Shedd and B. Worcester	56,109
Chimney cap	P. Lear	52,177
Chimney cleaners, Lamp	L. Keiler	58,265
Chimney holder and fastening	R. H. Dewey	52,399
Chimney holder for gas-burner	E. P. Gleason	59,588
Chisels, Holders for	J. Russell	53,834
Chisels, Tempering	W. M. Everitt	56,916
Cholera, Hog, Medical compound for	M. Boyes	58,371
Cholera, Hog, Medicine for	W. M. Runyon, R. H. Haller, and D. B. Morris.	58,890
Cholera, Treating	A. C. Campbell	53,407
Chopping machine, Meat and vegetable	H. W. Russell	52,449
Chronographs, Electro-ballistic	P. Le Boulengé	51,905
Chucks	D. E. Whiton	58,704
Chucks	R. H. Thorn	58,152
Chucks	R. W. Morse	56,981
Chucks	T. G. Arnold	60,116
Chucks	R. and T. Ross	57,383
Chucks	I. Smith	56,330
Chucks	J. C. Chapman	60,138
Chucks	L. H. Olmstead	54,760
Chucks	I. Smith	56,329
Chucks for holding buttons	E. Russell	60,258
Churns	A. J. Pope	60,240
Churns	A. J. Vanatta	60,289
Churns	V. Palmer	60,414
Churns	G. H. Lenher	60,391
Churns	G. N. Brigham	56,520
Churns	J. A. Balzart	58,047
Churns	J. Young	56,661
Churns	W. and D. C. Burson	58,059
Churns	J. M. Mickey	58,192
Churns	O. W. Stanford	56,115
Churns	J. Cooper	56,340
Churns	J. L. Rust	56,103
Churns	G. L. Witsil	56,153
Churns	A. Westcott	55,566
Churns	F. J. Crissey	55,825
Churns	T. Gillmore	56,036
Churns	J. F. Seaman	55,169
Churns	D. Marshall	55,320
Churns	J. Boyers	55,996
Churns	E. C. Leonard	55,508
Churns	A. W. Hall	55,491
Churns	J. Dodder	52,272
Churns	J. Rankin	52,075
Churns	J. O'Donald	52,066
Churns	S. T. W. Potter	55,360
Churns	W. H. Tillow and S. Shumway	55,934
Churns	G. Wolf	52,103
Churns	U. Whisler	55,407
Churns	A. C. Wade	57,051
Churns	G. B. Waller	60,097
Churns	E. Hoyt	56,050
Churns	M. Bratt	58,976
Churns	Z. B. Shannon	59,282
Churns	A. Westcott	52,919
Churns	T. K. Smith	60,077
Churns	W. Boynton	52,674
Churns	I. J. Ryerson	52,890
Churns	J. S. Stewart	52,767
Churns	J. W. Scfton	53,380
Churns	D. A. Fiske	53,432
Churns	D. Dunton	53,591
Churns	L. Mooney	60,035
Churns	J. K. Reiner	60,058
Churns	B. Illingworth	57,943
Churns	T. J. Thorn	52,340
Churns	M. Neal	52,313
Churns	F. Shurr and J. Palmer	51,875
Churns	N. Chapman	52,268
Churns	D. E. Teal	52,467
Churns	E. McMillan, jr	59,802
Churns	E. H. Beckwith	59,811
Churns	W. M. Cook	59,560
Churns	J. C. Bodine	59,759
Churns	J. D. Parrott	59,637
Churns	J. Davis, 2d	59,790
Churns	J. E. Casey	53,521
Churns	J. White	53,512

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Churns	W. D. Matthews	59, 428
Churns	D. B. Randall	53, 487
Churns	H. P. Westcott	59, 691
Churns	B. Graham	55, 281
Churns	A. W. Hall	55, 287
Churns	H. Scribner	53, 352
Churns	F. J. Robinson	53, 876
Churns	J. Rankin	53, 335
Churns	J. H. Mendenhall	57, 750
Churns	I. M. West	57, 606
Churns	O. W. Seely	57, 582
Churns	A. Carbnow	60, 473
Churns	H. C. Stoll	57, 794
Churns	G. H. Sanborn	57, 373
Churns	W. R. McCutcheon	57, 942
Churns	A. Hamlin	53, 141
Churns	S. Hewett	54, 343
Churns	E. P. Whitcomb	53, 912
Churns	H. Mott	54, 583
Churns	T. K. Bailey	54, 092
Churns	J. F. Quimby	54, 013
Churns	B. S. Fletcher	54, 878
Churns	A. Clift, jr	54, 861
Churns	N. E. Wilson	54, 634
Churns	J C. Bridgman	54, 846
Churns	H. Clift	58, 337
Churns	J. W. Forsyth	58, 628
Churns	J. Henry	58, 415
Churns	I. T. Price	58, 288
Churns	L. O. Allen	53, 766
Churns	J. Davis, 2d	53, 123
Churns	F. Danzenbaker	53, 228
Churns	W. S. Ferrier	56, 918
Churns	H. W. White	54, 632
Churns	J. D. Kellogg, jr	57, 730
Churns	T. E. Lockwood	56, 425
Churns, beer coolers, &c	S. S. Elder	60, 493
Churns, Dog	F. Traxler	55, 556
Churns, Gearing for	A. C. Mason	56, 771
Churns, Operating	J. P. Nichols	60, 232
Churn attachment	W. M. Pyle	53, 484
Churn dasher	A. J. Gibson	55, 484
Churn dasher	J. T. Rittenhouse	59, 781
Churn dasher	J. Gelston	54, 891
Churn dasher	G. H. Pool	54, 769
Churn dasher	D. W. Maurice	54, 930
Churn dasher	N. H. Spencer	59, 091
Churn dasher	A. Kirlin	55, 313
Churn dasher	E. G. Connelly	56, 374
Churn dasher	G. Deckman	56, 728
Churn dasher	A. W. Hall	60, 363
Churn dasher, Atmospheric	S. Case and A. W. Pratt	55, 622
Churn, Power	D. J. Knapp	55, 120
Churn, Power, and washing machine	W. M. E. P. and E. Doty	52, 273
Churn tops	E. Cox	53, 952
Churn and ice cream freezer	T. W. Pomeroy	55, 960
Churn washing machine	W. Orcutt	59, 444
Churn and washing machine, Combined	J. M. Peirce	59, 447
Cigars	C. Van Dyck	59, 485
Cigars, Clamp for holding, for tying	M. Ali	54, 811
Cigars, Cutting off	F. W. Hoffmann	59, 606
Cigars, Fillers for, Making	G. A. Reiniger	54, 476
Cigars, &c., Lighting, Compound for	C. J. M. Sohet and H. C. T. Molvaut	59, 868
Cigars, Moulding	I. A. Heald	54, 900
Cigars, Mouthpiece for	I. S. Barber	59, 544
Cigars, Pressing	J. Campbell	55, 619
Cigar holder and hat hook	C. Gschwind and J. Grether	57, 126
Cigar holder and tobacco pipe	G. M. Ross and W. H. West	56, 272
Cigar lighter	E. P. Gleason	59, 587
Cigar lighter	W. Belcher	58, 537
Cigar lighter, Gas jet	G. B. Snow and T. G. Lewis	52, 457
Cigar lighter and gasolier, Combined	W. C. Lesster	59, 617
Cigar machine	G. A. Reiniger	52, 217
Cigar press	A. Iske	56, 055
Cigarettes, Manufacture of	S. Shuck	58, 686
Cigarette machine	L. Kraus and A. Szigethy	52, 007
Cigarette mould and box, Combined	N. T. and S. B. Gassette	52, 842
Cinder and coal dust, Utilizing	A. L. Fleury	52, 554
Cistern leaders, Cut-off for	W. H. Hicks and F. Welker	60, 005
Cistern for draining peat	E. H. Ashcroft	53, 769
Cistern for water closets, urinals, &c	A. Ivers	59, 029
Clamp	W. F. Hulbert	55, 302
Clamps, Adjustable	W. G. Floyd	52, 983

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Clamps, Bedclothes	W. Fisher	60,351
Clamps, Clothes line	C. W. Howard	58,419
Clamps, Floor	S. C. and S. Winslow	54,805
Clamps, Floor	J. D. Winslow	59,305
Clamps, Flooring	A. S. Blinn and D. W. Hewitt	57,078
Clamps, Hitching or holdfast	J. P. Sinclair	59,085
Clamps, Moulders'	W. W. Tice	60.091
Clamps, Moulders'	C. Truesdale	51,903
Clamps, Moulders'	J. B. Crowley	51,995
Clamps, Picture frame	J. A. H. Dunn	54,463
Clamps, Planking	J. C. Thomas	55,554
Clamps, Planking	W. Glenn	54,327
Clamps, Screw, Hand	W. Ormsby	59,861
Clamps, Screw, Hand	H. Schmidt	57,195
Clamps, Serving	J. H. Pitezel	59,448
Clamps, Stitching	W. W. Taylor	59,094
Clamps for brooms	T. F. Boyer	53,776
Clamps for clothes lines	W. Winter	57,263
Clamps for furnacemen's use	A. P. Briggs	52,958
Clamps for gluing the tips on billiard cues	S. Gessinger	60,503
Clamps for holding cigars for tying	M. Ali	54,811
Clamps for holding saws	J. Briggs	56,519
Clamps for planking floors	H. B. Gregg	58,167
Clamps for stages	W. H. Seymour	52,757
Clamps for wash basins	J. Ewing	59,572
Clamps for wringing machines	J. Stimpson	58,694
Clamp and broom head	M. W. Owens	57,369
Clamp and clothes pin	G. F. Barden	59,545
Clamp and gauges for weatherboarding	D. M. Mourland	59,626
Clasps, Corset-busk	W. Devines	53,734
Clasps, File, for documents, &c	I. S. Richardson	52,323
Clasps, Spring-lever	G. D. Pike	53,671
Clasp lock, for books	L. Lall	60,017
Clasp for belting, &c	G. F. White and H. Chamberlain	59,332
Clasp for holding neckties and shirt collars together	C. M. Hyatt	57,221
Clasp for hoop skirts	S. R. Wilmot	58,527
Clasp for hoop skirts	T. B. DeForest	58,540
Clasp for hoop skirts	G. W. Cheesman and G. Durand	54,055
Clasp for hoop skirts	G. W. Cheesman	52,639
Clasp to hoop skirts, Attaching	C. Neumann	54,939
Clasp to the bottom hoop of skirts	L. W. McFarland	56,146
Clasp for leather straps	A. B. Conde	51,926
Clasp for looping ladies' dresses	H. K. Cole	52,822
Clasps for mail bags	L. Fox	58,091
Clay, Grinding	B. Porter	53,868
Clinching iron	D. H. Williams	55,189
Clock, Alarm	J. E. Buerk	58,058
Clocks, Calendar	G. B. Owen	54,198
Cloeks, Calendar	H. B. Horton	57,510
Cloeks, Musical	T. A. Kohn	54,175
Cloeks Pendulums for	W. D. Whaler	60,303
Cloeks, Striking works for	B. Bacon	57,843
Clock ease	H. B. Horton	57,511
Clock escapements	B. Bacon	54,277
Clock escapements	E. Groux	57,315
Clock movements, Springs for, Equalizing	H. Smith	59,668
Cloth, Cutting	V. H. Buschmann	54,681
Cloth, Enamelled	W. H. Haines	51,997
Cloth, Enamelling, Varnish for	W. H. Haines	51,998
Cloth, Felt, Stiffening composition for	P. O'Rork	55,153
Cloth, Felted, Fulling and finishing	M. D. Whipple	51,884
Cloth, Folding, Machine for	W. F. Heywood	56,048
Cloth, Guides for folding and uniting the edges of two pieces of	I. M. Rose	52,749
Cloth, Varnishing, Machine for	S. B. B. Nowlan	57,955
Cloth, wood, paper, &c., Saturating, with paraffine	S. Gwynn	52,788
Cloth-measuring machine	J. I. Benhan	52,378
Clothes dryer	S. Parker	53,541
Clothes dryer	T. T. Snover	57,204
Clothes dryer	L. C. Wright	59,935
Clothes dryer	R. H. Oates	59,527
Clothes dryer	J. Barnett	53,257
Clothes dryer	L. T. Ilgen	57,144
Clothes dryer	W. W. S. Orbeton	55,208
Clothes dryer	O. C. Brown	56,360
Clothes dryer	S. L. George	56,926
Clothes dryer	J. W. Epperson and T. W. Farrell	53,797
Clothes dryer	W. Gallaway	54,886
Clothes dryer	M. D. Hotchkiss	54,727
Clothes dryer	S. I. Trask	53,705
Clothes dryer	J. C. Connor	57,681
Clothes lines, Clamp for	J. Dale	57,264
Clothes pin	T. L. Goble	60,627
Clothes pin	R. S. Sanborn	57,977
Clothes pin	W. G. Ward	58,007

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Clothes pin or clamp	G. F. Barden	59, 545
Clothes pole	F. W. Tilton	55, 744
Clothes pole	W. W. Armington	58, 535
Clothes sprinkler	W. E. Staniford	52, 935
Clothes sprinkler	W. P. Gannett	55, 008
Clothes sprinkler	M. Moriarty	54, 819
Clothes sprinkler	H. A. Morse	56, 082
Clothes sprinkler	J. L. Kendall	55, 956
Clothes sprinkler	F. Ashley	59, 158
Clothes washer	A. B. Mercier	56, 773
Clothes washing rubber	H. Burk	56, 523
Clothes wringer	J. S. Lash	59, 041
Clothes wringer	J. F. Pond	51, 862
Clothes wringer	J. C. Dickey	57, 485
Clothes wringer	H. Wehle	54, 631
Clothes wringer	J. N. Pease	54, 764
Clothes wringer	H. Nash	58, 669
Clothes wringer	S. A. Bailey	53, 098
Clothes wringer	O. Reeves	56, 449
Clothes wringer	R. R. Gipson	55, 486
Clothes wringer	W. T. McMillen and E. P. Conrick	56, 591
Clothes wringer	J. N. Pease and G. Lewis	56, 676
Clothes wringer	A. Gallahue	59, 208
Clothes wringer	D. Lyman	52, 867
Clothes wringer	D. F. Williams	51, 888
Clothes wringer	H. Robbins	56, 865
Clothes wringer, Bench for	S. A. Bailey	53 099
Clothes wringer, Rolls for	H. E. Smith	52, 515
Clothes wringer, Rollers and fasteners for	R. B. Hugunin	53, 001
Clover, Threshing and hulling	M. H. Mansfield	56, 583
Clutch for power presses	N. C. Stiles	52, 335
Coal, Combustion of, Applying oil and water to assist the	S. C. Salisbury	54, 216
Coal, Desulphurizing, for welding irons, &c.	J. H. Elward	52, 699
Coal, Hoisting and dumping	G. Martz	59, 243
Coal, minerals, &c., Mining	W. Locke, J. Warrington, W. E. Carrett, W. E. Marshall, and J. Telford.	54, 833
Coal, potatoes, &c., Assorting	M. D. Dickinson	58, 229
Coal, Waste, Burning	J. D. Whelpley and J. J. Storer	53, 208
Coal dumping apparatus	E. R. Kerr	58, 549
Coal dust and cinder, Utilizing	A. L. Fleury	52, 554
Coal hod	E. R. Hall	56, 408
Coal hod	E. A. Jeffery	52, 856
Coal hod	S. Thompson, G. Smith, and J. S. Jennings.	53, 384
Coal screen	J. B. Smith	57, 002
Coal scuttle	G. Smith	56, 812
Coal scuttle	J. Holden	57, 137
Coal scuttle	E. Eltinge	60, 349
Coal scuttle	C. F. Henis	60, 003
Coal scuttle and sifter	C. L. W. Baker	56, 874
Coating amalgamating pans, &c., Composition for	C. H. Golding	52, 040
Coating vessels for petroleum, Composition for	W. L. Dooling and D. Christman, jr.	53, 280
Cock, Draught, for soda water apparatus	W. P. Clark	56, 704
Cocks, Gas, Automatic	C. MacRae	56, 240
Cocks, Gas-stop, Electric	J. A. Heyl	58, 943
Cocks, Gas, Turning by electro-magnetism	S. Gardiner, jr.	55, 642
Cocks, Gauge	C. L. Frink	55, 640
Cocks, Gauge, Boiler	W. T. Howard	58, 546
Cocks, Gauge, Steam	J. Broughton	52, 521
Cocks, Gauge, Steam	F. Henke	54, 722
Cocks, Gauge, Steam	J. C. Schaefer	52, 252
Cocks, Gauge, for steam generators	M. M. Robinson	53, 344
Cocks, Globe	J. Worcester	55, 756
Cocks, Stop	F. Roach	55, 784
Cocks, Stop	H. Strater, jr.	55, 931
Cocks, Stop	W. H. DeValin	54, 305
Cocks, Stop	M. C. Kilgore	53, 627
Cocks, Stop	B. E. Lehman	58, 845
Cocks, Stop, Hydrant	H. L. Fraily	53, 736
Cocks, Try, for steam generators	J. Regester	53, 337
Cocks, Urn, Drop-handle	H. and E. L. Bailey	57, 246
Cocks and funnels combined	A. Y. Wilson	53, 074
Cockeye	C. Boehmer	59, 347
Coffee, Hulling	R. Anderson	55, 947
Coffee, Making, Apparatus for	J. V. Meigs	54, 933
Coffee, Making, Apparatus for	F. Liesche	55, 509
Coffee, Preparation of	T. Hyatt	53, 250
Coffee, Settling, Composition for	G. W. Carleton	56, 704
Coffee hullers	A. Angell	59, 538
Coffee pot	W. Edson	58, 396
Coffee pot	W. Westlake	58, 518
Coffee pot	J. C. Gove	53, 139
Coffee roaster	F. Humphrey	53, 148

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Coffee roaster	H. B. Masser	56, 964
Coffee roaster	P. Plant	56, 861
Coffer dams	A. Gilmore	53, 919
Coffer dams	J. Braidwood	55, 235
Coffins	J. A. Fogg	52, 405
Coffins	J. A. Fogg	57, 829
Coffins	D. Clarke	56, 182
Coffins	J. Burns	56, 364
Coffins	H. D. Sprague	56, 287
Coils, Induction	J. Kidder	52, 054
Coils for brewers' boilers	J. Trageser and J. G. Schreiber	55, 747
Coin holder	N. Landry	55, 121
Collars, Breast	S. E. Stowell	52, 088
Collars, Breast and hame-tug	A. McMullen	60, 031
Collars, Horse	C. Wolf	60, 107
Collars, Horse	J. A. Powell	59, 647
Collars, Horse	C. R. Durfee	58, 620
Collars, Horse	C. Alvord	57, 457
Collars, Horse, Filling	A. Schrick and H. Hildenbrand	59, 726
Collars, Horse, Forming	F. Cunningham	52, 826
Collars, Horse, Stretching	A. Schrick and H. Hildenbrand	59, 727
Collars, Ladies' imitation	C. Lang	57, 154
Collars, Men's	D. Mackay	53, 462
Collar, necktie, and bosom, Combined	G. V. Woods	58, 561
Collars, Paper	J. W. Griswold and J. Sigwalt, jr	58, 812
Collars, Paper	S. S. Gray	52, 163
Collars, Paper	C. E. Richards	52, 607
Collars, Paper	H. F. Knapp	54, 561
Collars, Paper	L. M. Crane	58, 223
Collars, Paper	W. B. Harris	54, 720
Collars, Paper	S. S. Stone	56, 827
Collars, Paper, Bands for	G. K. Snow	52, 371
Collars, Paper, Boxing	D. Stoner and J. Sigwalt, jr	60, 278
Collars, Paper, Button holes in	D. Stoner	53, 897
Collars, Paper, Button holes for	N. T. Whiting	55, 753
Collars, Paper, Button holes for	B. F. Porter	52, 599
Collars, Paper, Creasing	T. Tebbetts	59, 680
Collars, Paper, Fastening for	S. Hodgins	56, 854
Collars, Paper, Finishing and boxing	J. J. Currier and S. Wells	60, 484
Collars, Paper, Folding	C. E. Moore	59, 134
Collars, Paper, Folding	J. J. Currier	55, 005
Collars, Paper, Machine for making	H. F. Knapp	59. 410
Collars, Paper, Machine for	J. C. Ford	57, 308
Collars, Paper, Manufacture of	G. W. Kay	54, 404
Collars, Paper, Pressing	J. H. Darlington	52, 785
Collars, Paper and cloth	J. Barton	52, 659
Collars, Shirt	S. A. Bemis	52, 516
Collars, Water-proof	H. C. Gibson	53, 808
Collars and bosoms, Paper	J. C. Arms	55, 451
Collars and bosoms, Paper	M. Pinner	58, 673
Collars and cuffs, Paper	D. A. Alden	59, 938
Collars and necktics	W. Hunter	54, 168
Collars and neck-ties, Attachment for	C. W. Powel	59, 646
Collar and neck-tie supporter	C. L. Lockwood	55, 317
Collars for drill rods	V. T. Priest	56, 607
Colors and dyes, Manufacture of	G. H. Reed	54, 957
Combs	J. H. Hicks	60, 004
Combs	T. Schreiber	59, 664
Combs	E. H. Knight	60, 197
Combs	E. Brown	52, 262
Combs	L. Picot	59, 645
Combs	J. Emerson	60, 494
Combs	J. P. Noyes	55, 349
Combs	I. Rice	59, 926
Combs, Curry	F. N. Frost	59, 992
Combs, Curry	M. Sweet	55, 553
Combs, Curry	W. L. Arnold	59, 118
Commode, Disinfecting	H. J. Alvord	56, 870
Compass, Marine	S. Custer	55, 827
Compass, Mariners'	E. S. Ritchie	53, 875
Compass scales, Mariners'	J. Reid	57, 970
Compasses and calipers	F. P. Pfleghar and W. Schollhorn	51, 967
Composing stick	W. T. Tillinghast	54, 979
Composition, Disinfecting	F. Hoffman and R. Wendler	54, 907
Composition, Medical	P. G. Rosenblatt	55, 540
Composition, Medical	T. W. Speissegger	55, 730
Composition, Medical	A. J. Runyan	53, 348
Composition, Water-proof	S. B. B. Nowlan	57, 956
Composition, Fulminating	G. Boldt	56, 167
Composition for cleaning and scouring textile fabrics	G. E. and E. L. Rolland	52, 244
Composition for coating amalgamating pans, &c	C. H. Golding	52, 040
Composition for coating ships	C. R. Milks	56, 078
Composition for coating vessels for petroleum	W. L. Dooling and D. Christman, jr.	53, 280

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Composition for curing rot in sheep	H. D. Niles and J. C. Brooks	55, 697
Composition for disinfecting and preserving	J. Hickson and L. L. Wilkinson	54, 345
Composition for destroying insects in trees and plants	J. A. Elias	59, 986
Composition for facing moulds	R. B. Smith	56, 817
Composition for filling wood	J. Perry	57, 960
Composition for filling pores of wood	C. S. Benjamin	58, 203
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Composition for forming useful and ornamental articles	D. E. Somes	59, 154
Composition for furniture and other purposes	J. J. Wiggin	60, 309
Composition for graining leather	O. P. Whitman	52, 920
Composition for iron and other metals	W. W. Arnold	55, 452
Composition for kindling fire	M. Carrstens	53, 270
Composition for lining barrels	H. W. C. Tweddle	57, 016
Composition for lining barrels	A. C. Dunn	55, 073
Composition for making sharpening stones	R. R. Miller and A. W. Carver	60, 536
Composition for moulders' match plates	G. P. Darrow	56, 187
Composition for painting metallic roofs	C. D. Smith	54, 426
Composition for pavements, &c	Geo. Davis	58, 718
Composition for preserving meat	J. J. Harrison	56, 217
Composition for stiffening felt cloth	P. O'Rork	55, 153
Composition for water-proofing	J. D. Lee	55, 507
Composition for welding and brazing	R. B. Smith	56, 815
Composition for the cure of ague	J. Monfort	60, 538
Composition of matter	W. K. Wyckoff	58, 532
Composition of matter	L. Franeis	55, 957
Composition of matter for polishing metals	A. M. Sawyer	60, 264
Composition of matter for rendering paint fire-proof	J. B. Harris	56, 044
Composition to be used as cement and as material for moulding.	S. Sorel	53, 092
Compound, Medical	S. P. Clayton	53, 032
Compound, Disinfecting	H. Napier	57, 174
Compound, Explosive	A. Nobel	57, 175
Compound, Match	L. Lanzweert	53, 454
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Compound, Medical	D. W. Stuttsman	59, 803
Compound, Medical	B. Sampson	59, 750
Compound, Medical	G. B. Bieler	51, 914
Compound, Medical	W. Caweins	52, 530
Compound, Medical	Z. Marshall	59, 776
Compound, Medical	J. B. Edwards	57, 884
Compound, Medical	J. V. Hulse	54, 550
Compound, Medical	E. G. Perry	54, 944
Compound, Medical	H. De Lapaturelle	54, 304
Compound, Medical	P. M. Devos	56, 533
Compound, Medical	J. M. F. Hall	58, 249
Compound, Medical	M. Richardson	55, 160
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Compound, Medical	W. C. Smith	52, 760
Compound, Medical, for the eyes	G. Mershon	53, 852
Compound, Roofing	G. Duncan	53, 281
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Compound for feeding stock	C. G. Otis	59, 255
Compound for lighting cigars, &c	C. J. M. Sohet and H. C. T. Molvaut	59, 868
Compound for the cure of diseases in hogs	D. W. Stow	60, 591
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Computing machine	J. H. Chidester	60, 475
Concentrator	J. Hendy	53, 976
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Condensers	J. F. Llewellyn	57, 932
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Condensers	J. H. Fairchild	53, 528
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Condensers, Engine, Steam	J. Absterdam	58, 362
Condensers, Revolving	J. F. Spence	54, 428
Condensers, Steam	J. K. Fergnson	56, 738
Condensers, Surface	F. Ortleib	60, 042
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Cooking purposes, Apparatus for	O. J. Morrill	55, 340
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Coolers, Beer, Churns, &c	S. S. Elder	60, 493
Coolers, Filter	S. M. Pike	60, 553
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Coolers, Liquid	P. Reutlinger and A. Herbert	54, 016
Coolers, Liquid	A. Fischer	54, 708
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Coolers, Water	J. Eckert	58, 793
Coolers, Water	T. T. Markland	53, 998
Coolers, Water	G. T. Palmer	56, 792
Coolers, Water, and purifier	J. M. Baird	55, 037
Coolers, Water and wine	J. Dietschy	54, 306
Coolers for beer, &c	J. Herget	57, 900
Coolers for brewing and distilling	L. Reich	53, 677
Cooler and filter, Combined	H. T. Woodman	58, 530
Coolers for grinding mills	P. C. Fritz	59, 382
Coolers for preserving butter, milk, and other articles	W. Garrard	59, 993
Cooler and evaporator	H. Kohly, jr	53, 226
Cooler and tumbler washer	D. M. Somers	54, 973
Cooling and disinfecting, Apparatus for	S. C. Maine	60, 212
Cooling and preserving meats, fish, vegetables	C. F. Pike	60, 552
Cop winding machine	B. H. Jenks	57, 330
Copper, &c., Engraving	V. Q. Wedekind	58, 516
Copper, Ores of sulphurous, Treating	J. D. Whelpley and J. J. Storer	59, 693
Copper and other metals, Ores of, Treating	W. Henderson	60, 514
Cords, Covering for, Weaving	J. Danby	53, 372
Cords, Fishing lines, and other small	P. Brooks	59, 120
Cords, Winding into a series of united skeins	E. Brown	52, 382
Cordage, Small, and twine, Making	G. A. Taylor, L. and H. L. Crandall, and J. Larkin.	60, 280
Cordage, webbing, &c., making	J. A. Bazin	56, 485
Corded binding for India-rubber and other fabrics	C. A. Ensign	56, 393
Cording machine	C. Cobb	56, 372
Cores, Venting, for foundry purposes	H. Tucker	59, 674
Coring, cutting, and paring machine	W. Weaver	53, 754
Corks, Cutting	G. Hammer	54, 896
Corks, Cutting	A. J. Bailey	55, 036
Cork-cutting machine	A. Mackie	52, 000
Cork extractors	C. Rosenberry	58, 889
Cork pull	K. Loffler	59, 241
Cork and other materials, Water-proofing	D. E. Breinig	54, 462
Cork for mattresses, Treating	L. Bauhoefer	59, 342
Corks from bottles, Extracting	J. T. Ashley	58, 769
Corks in bottles, Fastening	G. Bousignes	53, 090
Corn, Green, Cutting from the cob	J. Burt and L. F. Dunn	55, 614
Corn, Harvesting, shelling, and husking, Machine for	D. A. Dickinson	58, 785
Corn-cake machine	W. Manning	56, 241
Corn huskers	I. Philbrook	53, 180
Corn huskers	T. J. Brown	57, 283
Corn huskers	J. H. Gans	57, 888
Corn husker and corn-stalk cutter	J. Russell	60, 643
Corn planter and plough, Combined	S. M. Swartz	57, 994
Corn popper	W. W. S. Orbeton	59, 253
Corn shellers	I E. Overpeck	60, 046
Corn shellers	J. Davis	52, 690
Corn shellers	E. F. Sherman	57 393
Corn shellers	A. Adams	54, 659
Corn shellers	W. Gilman	55, 485
Corn shellers	M. and S. Houseman	60, 375
Corn shellers	D. K. Reeder	55, 362
Corn shellers	W. R. Burns	53, 567
Corn sheller and bean thresher	B. P. Pendexter	55, 899
Corn sheller for table use	E. L. Tevis	52, 092
Corn stalks, Cutting	G. W. Cole	57, 678
Corn stalks, Cutting and raking	T. M. Hill and S. D. Tuttle	60, 008
Corn stalks, Cutting standing	J. M. Goff	57, 893
Corn stalks and old cotton, Pulling up	W. Altick	56, 509
Corn and cob, Grinding	S. Stuskey	58, 912
Corn from the cob, Cutting	T. A. Morley	57, 361
Corn from the cob for table use, Stripping	W. C. McGill	53, 849
Corn on the cob, Green, Drying and preserving	D. Parker	53, 861
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Cornets and other musical instruments	I. Fiske	59, 204
Corsets	C. D. Rutherford	60, 428
Corsets	S. M. Perry	56, 794
Corsets	E. Hambujer	55, 972
Corsets, Skirt supporting	C. A. Griswoid	56, 210
Corset-busk clasps	A. Devines	53, 734
Corset clasp	J. W. Carter	57, 085
Corset springs, Extension	S. H. Barnes	56, 345
Corsets and bustles, Combined	L. H. Foy	54, 323

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Corset and skirt supporter	E. Blakeslee	55, 608
Cotton, Bleaching, Stained	J. A. Meany	53, 646
Cotton, Cleaning	J. E. Hooper	52, 289
Cotton, flax, &c., Treating	C. W. and O. G. Newton	52, 877
Cotton, Gun	F. A. Abel	59, 888
Cotton, linen, and other fabrics, to prevent them from burning, Solution to be applied to.	J. McGill	54, 382
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Cotton, Opening and cleaning, Picker houses for	R. Kitson	55, 118
Cotton, Picking	J. Griffin	55, 283
Cotton, Picking	W. E. Prall	52, 880
Cotton, Picking, Teeth of machine for	B. M. Smith	54, 619
Cotton, Preparing, for carding engines	R. Pilson	59, 259
Cotton bales, Metal bands to, Applying and securing	J. J. McComb	59, 151
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Cotton-bale tie	J. Booth	54, 675
Cotton-bale tie	Z. W. Lee	58, 844
Cotton-bale tie	W. Onions	59, 443
Cotton-bale tie	R. G. Latting	60, 528
Cotton-bale tie	J. J. McComb	59, 152
Cotton-bale tie	G. A. Scaver	59, 141
Cotton-bale tie	W. Onions	55, 353
Cotton-bale tie	J. H. Gridley	59, 007
Cotton gins	J. E. Carver	51, 892
Cotton gins	F. M. McMeckin	60, 402
Cotton gins	S. R. Parkhurst	51, 962
Cotton gins	C. L. Fleischmann	52, 037
Cotton gins	C. Spofford and C. H. Hersey	55, 787
Cotton gins	F. T. Ackland, H. G. Mitchell, and M. Mustapha.	58, 187
Cotton gins	E. A. Cowper	53, 753
Cotton gins	H. V. Scattergood	55, 532
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Cotton gins	J. Watrous, jr	53, 910
Cotton lappers	D. Hussey	58, 945
Cotton pickers	J. G. Page	69, 235
Cotton pickers	W. D. Ludlow	52, 303
Cotton pickers	G. A. Howe	53, 447
Cotton pickers	G. A. Howe	53, 147
Cotton-picking machine	A. Tiensch	53, 901
Cotton-seed hullers	J. Perkins	55, 701
Cotton-seed cleaner	A. Wells	60, 300
Cotton-seed machine	F. A. E. G. de Massas	52, 116
Cotton-seed planter	H. R. Fell and E. Phifer	59, 765
Cotton-seed planter	F. H. Brown	58, 372
Cotton-seed planter	F. H. Brown	55, 811
Cotton seed, Planting	I. W. McGaffey	56, 430
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Cotton tie	J. W. Heddenberg	60, 187
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Cotton tie	M. A. Tarleton	59, 293
Cotton tie	C. W. Wailey	58, 698
Cotton-tie fastening	T. MacIntire	57, 945
Cotton and corn stalks, Pulling up old	W. Altick	56, 509
Cotton and hemp stalks, Pulling	A. W. Goddard	60, 359
Cotton and other fibrous substances, Cleaning	E. Lord	52, 008
Cotton and wool, Picking and cleaning	S. R. Parkhurst	56, 675
Couch, bureau and piano, Combined	C. Hess	56, 413
Couch, chair, and stretcher	J. E. Jonett	59, 403
Couch and car seat	T. Sharp	57, 198
Couch and seat for railroad cars	H. Allen	55, 448
Countersink	A. Williams	52, 776
Counter supporter	J. Reising	59, 075
Counting machine	S. Comfort	52, 681
Court-plaster, Preparation of	L. C. Gail	54, 326
Couplings, Aqueduct	J. Aldrich	52, 010
Couplings, Belt	W. Leas	56, 767
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Couplings, Car	J. H. Kavanaugh	60, 012
Couplings, Car	C. Spear	59, 517
Couplings, Car	V. and E. Cole	60, 479
Couplings, Car	N. Robbins, jr	55, 537
Couplings, Car	H. Hughes	55, 870
Couplings, Car	W. Bergmann	55, 989
Couplings, Car	W. W. Hinman and W. W. Neville	55, 104
Couplings, Car	H. H. Trenor	57, 014
Couplings, Car	G. D. Spooner and J. F. F. Hale	57, 208
Couplings, Car	D. B. Snyder	57, 397
Couplings, Car	D. H. Payne and G. Boxley	53, 037

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Couplings, Car	E. E. Packer, jr., and J. Daley	60,544
Couplings, Car	J. Kingsbury	57,732
Couplings, Car	J. Bailor	57,658
Couplings, Car	G. W. Wilson	57,807
Couplings, Car	A. Pierce	57,962
Couplings, Car	J. H. Reed	57,767
Couplings, Car	C. W. Baldwin	57,618
Couplings, Car	D. Lippy	57,931
Couplings, Car	A. A. Lusk and S. A. Wells	53,639
Couplings, Car	S. S. Quest	57,566
Couplings, Car	A. Hartman	57,504
Couplings, Car	E. Cary	53,215
Couplings, Car	G. Q. and J. N. Wallis	54,955
Couplings, Car	M. H. Card and J. W. Stewart	54,483
Couplings, Car	M. Ingersoll	54,913
Couplings, Car	C. D. Clinton	56,371
Couplings, Car	C. Holtz	58,418
Couplings, Car	D. C. Guttridge	58,723
Couplings, Car	C. Weaver	60,299
Couplings, Car	H. Adkins	58,041
Couplings, Car	T. D. Powers	58,883
Couplings, Car	R. G. Fowler	58,090
Couplings, Car	A. B. and F. F. Taft	53,764
Couplings, Car	J. Widney	54,238
Couplings, Car	C. O. Wheeler	54,237
Couplings, Car	J. A. Niman	56,085
Couplings, Car	J. W. Boughton	53,560
Couplings, Car	J. Harris	52,410
Couplings, Car	C. C. Burns	52,962
Couplings, Car	W. E. Tickler, E. T. and D. M. Marshall.	56,866
Couplings, Car	E. J. Frazier	55,271
Couplings, Car	W. Van Valkenburgh	56,837
Couplings, Car	J. H. Parsons	52,592
Couplings, Car	D. J. Tittle	60,092
Couplings, Car	W. L. Newell and J. S. Simmerman	52,736
Couplings, Car	T. S. Minness	59,858
Couplings, Car	S. J. Wallace	59,101
Couplings, Car	H. L. Ogden	59,860
Couplings, Car	J. B. Rumsey	57,385
Couplings, Car	H. Webster	52,097
Couplings, Car	E. H. Keith	60,384
Couplings, Car	T. J. Christy	53,574
Couplings, Friction	J. Mattison	53,846
Couplings, Hose	S. H. Loring	58,850
Couplings, Hose	J. E. Ford	52,839
Couplings, Hose	R. Heneage	56,223
Couplings, Hose	J. C. Osgood	55,354
Couplings, Hose	J. B. Mitchell	56,324
Couplings, Pipe	A. Gwynne	60,178
Couplings, Pipe	E. Barbaroux	51,910
Couplings, Pipe	H. D. Parker	52,793
Couplings, Pipe	E. Duffee	59,982
Couplings, Pipe	G. Shone	52,214
Couplings, Rod	D. Daltry	56,849
Couplings, Shaft	M. Hawkins	53,143
Couplings, Shaft	S. P. Ruggles	54,212
Couplings, Shaft	J. L. Winslow	58,330
Couplings, Shaft	B. Roach	57,771
Couplings, Shaft	M. Hawkins	58,345
Couplings, Shaft	M. Mead	52,307
Couplings, Shaft	G. L. Baum	55,198
Couplings, Thill	J. McDermott	52,586
Couplings, Thill	R. O. Rood and S. H. Hackett	59,455
Couplings, Thill	G. Clow	57,090
Couplings, Thill	A. and G. Woeber	55,192
Couplings, Thill	A. and G. Woeber	55,191
Couplings, Thill	J. J. Brown	57,854
Couplings, Thill and pole	H. L. Taylor	52,621
Coupling, Whiffletree	J. Hyde	59,398
Coupling joints for well-boring shafts	J. H. Bell	57,664
Coupling shafts of boring tools	S. Fawcett	53,219
Coupling for carriage felloes	H. Austin	54,485
Coupling for carriage thills	J. Howarth	52,170
Coupling for carriage thills	C. H. Bassett	54,840
Coupling for cultivators	S. M. Whitney	59,698
Coupling for propeller-shafts of ships	W. L. and T. Winans	57,835
Coupling for shafting	L. Gray	52,162
Coupling for vehicles	N. W. Gordon	56,207
Covers, Seat, Privy	W. Beach	56,881
Covers, Teakettle	C. Townes	53,290
Covers for fruit jars	T. A. Bunnell	52,525

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Covers to kettles, boilers, stoves, &c., Attaching	W. Hailes	60,508
Covers to stoves, teakettles, &c., Hinging	D. G. Littlefield	53,250
Covering, Floor	A. H. Platt	57,763
Cows, Confining, while being milked	L. Brown	59,550
Cowmilker	L. O. Colvin	54,865
Craekers, Cream	D. M. Holmes	58,644
Cracker machine	N. M. Garrison	55,276
Cradle	W. Bedle	55,227
Cradle	A. Diek	52,146
Cradle, Self-rocking	B. Brazelle	54,815
Cradle, stool, and chair	J. B. Warren	55,401
Cradle and baby-walker	J. H. Brown	51,795
Cradle and chair	A. Berny	55,990
Cradle and chair, Combined	F. E. Coomes	56,718
Cranberry gatherer	E. D. Miller	59,857
Cranes	F. Rumpf	53,044
Crane and drill attachment	I. S. Laubach	53,992
Cranks on rods, Bending	E. Lord	53,242
Crank-shaft and fly-wheel, Combined	E. B. Jucket	59,032
Crates for carrying fruit	W. Gilbert	53,437
Cravats	O. Ernst	53,428
Cream, Straining	H. Baker, G. F. Holmes, and R. D. King.	57,452
Cream from whey, Extracting	K. Eggar	58,232
Crib and chair	J. E. Small	59,087
Crib and sofa	E. E. Everett	55,265
Crib for children	W. L. Gerard	60,357
Crimpers, Hair	B. Mannon	57,441
Crimping machine	J. P. Jamison	54,735
Crimping machine	S. G. Cabell	56,365
Crimping pins, Hair	E. A. Tyler	53,060
Croquet, Parlor	W. S. Messinger	55,139
Croquet boards	J. Federhen	59,376
Croquetrie	L. and M. Bradley	54,848
Crossheads	J. West	54,457
Crossheads for blowers	P. H. and F. M. Roots	56,614
Crucibles, Making	S. R. Thompson	60,090
Crucibles Moulding	J. L. Presbrey	54,204
Crumb remover	A. B. Hoffman	60,069
Crupper-loop for saddletrees	J. C. Young	52,924
Crushing, rolling, and kneading machine	C. Bates	56,877
Crutches	R. W. Ware	57,416
Cuffs and collars, Paper, and the manufacture of	D. A. Alden	59,938
Cuffs or wristbands, Paper	A. A. Evans	56,737
Culinary cabinet	J. Billings	53,260
Culinary sinks	Z. Hunt	56,225
Cultivators	G. W. Ziegler	53,212
Cultivators	G. Perry	53,867
Cultivators	A. T. Harrison	54,534
Cultivators	W. S. Weir, jr	53,205
Cultivators	S. Hoffheins	54,160
Cultivators	J. E. Morrison	54,192
Cultivators	C. S. Pangborn and G. W. Beers	53,663
Cultivators	C. Daniel	57,484
Cultivators	S. Dwight	53,590
Cultivators	M. Porter, C. E. and G. F. Jenkins	57,562
Cultivators	H. W. Curtis	54,122
Cultivators	J. H. Barley	57,660
Cultivators	A. F. Stillwell	57,792
Cultivators	J. Bergen	57,619
Cultivators	H. Hoover	57,906
Cultivators	J. W. Boosinger	57,668
Cultivators	W. Geahr	57,699
Cultivators	W. J. Andrews	57,841
Cultivators	J. Burnham and W. C. Lathrop	57,858
Cultivators	G. T. Gifford	57,700
Cultivators	J. Hollinger	57,719
Cultivators	M. H. Bueknall	57,856
Cultivators	T. Beale	58,578
Cultivators	J. K. Reiner	58,476
Cultivators	J. Fridy	58,805
Cultivators	A. Stark	58,147
Cultivators	A. Anderson	58,188
Cultivators	E. Children	58,380
Cultivators	G. W. Doolittle	58,389
Cultivators	E. Parmele and R. N. Patterson	54,763
Cultivators	J. Cook	58,383
Cultivators	H. F. Byerly	54,854
Cultivators	W. D. Fisher	54,317
Cultivators	O. Barr and F. F. Cox	54,669
Cultivators	W. McCormiek	54,751
Cultivators	B. F. Young	54,637
Cultivators	J. Case	53,947

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Cultivators	T. F. Bertrand and P. Sames	54, 099
Cultivators	E. P. Wheeler	53, 911
Cultivators	H. Barnes	54, 280
Cultivators	G. L. Hutchinson	52, 047
Cultivators	A. M. Black	55, 993
Cultivators	J. Custer	55, 826
Cultivators	T. U. Webb	55, 785
Cultivators	G. W. Warren	56, 295
Cultivators	E. Starr	56, 288
Cultivators	D. C. Stover	56, 289
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Cultivators	E. M. Sorley	56, 286
Cultivators	R. Bullock	56, 173
Cultivators	J. S. and I. Rowell	56, 102
Cultivators	S. P. Elter	58, 082
Cultivators	J. Lacy	53, 837
Cultivators	C. Holman	53, 446
Cultivators	J. N. Arvin	56, 511
Cultivators	P. Hildreth	53, 445
Cultivators	W. W. Philler	59, 643
Cultivators	I. Henton	52, 998
Cultivators	J. Canfield and C. Hess	53, 408
Cultivators	H. C. Hunt	59, 720
Cultivators	J. C. French	59, 381
Cultivators	A. F. Grove	59, 592
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Cultivators	G. W. Prugh and W. H. Beard	52, 743
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Cultivators	A. Lamb	52, 421
Cultivators	J. Savill	52, 754
Cultivators	C. B. B. Deyo	52, 542
Cultivators	J. B. Skinner	52, 217
Cultivators	H. Rice	52 606
Cultivators	J. W. Tyson	57, 222
Cultivators	D. J. Noble	53, 326
Cultivators	M. H. Hullinger	53, 303
Cultivators	A. S. Markham	52, 429
Cultivators	G. C. Teller	52, 770
Cultivators	A. J. Stover	52, 905
Cultivators	C. S. Roberts	59, 454
Cultivators	W. Kiddoo	59, 231
Cultivators	E. S. Seger and J. C. Ormiston	59, 279
Cultivators	L. J. Caswell	59, 358
Cultivators	J. B. Herman	59, 012
Cultivators	J. B. Herr	59, 013
Cultivators	A. D. Stocking	55, 173
Cultivators	H. B. Smith	55, 381
Cultivators	J. H. Thomas and P. P. Mast	52, 093
Cultivators	T. N. Sherwood	52, 213
Cultivators	B. F. Kessler	52, 053
Cultivators	T. E. Ellett	56, 022
Cultivators	B. O. Rich	60, 422
Cultivators	W. T. Watson	60, 449
Cultivators	A. P. Anderson and B. Edwards	56, 157
Cultivators, Corn	D. J. Noble	58, 125
Cultivators	C. Belden	52, 515
Cultivators, Corn	L. B. Moore	57, 752
Cultivators, Corn	H. S. Potter	57, 563
Cultivators, Corn	C. W. Taliaferro	56, 122
Cultivators, Corn	L. O. Stevens	58, 693
Cultivators, Corn	J. S. Stukey	52, 462
Cultivators, Corn-planter	M. H. Lineback	53, 156
Cultivators, Cotton	A. K. and B. H. Foster	60, 625
Cultivators, Cotton	J. A. Hall	59, 215
Cultivators, Cotton	W. W. Blair	55, 607
Cultivators, Field and garden	E. L. Dorsey	55, 256
Cultivators, Gang	C. Belden	51, 790
Cultivators, Garden	J. A. Hall	58, 814
Cultivators, Guard attachment for	T. B. McConnaughey	57, 747
Cultivators, Hand	G. Smith	52, 083
Cultivators, Horse and hoe	A. W. Ross	59, 269
Cultivators, Rotary	J. C. Fitzgerald	60, 164
Cultivators, Rotary	A. Thompson	58, 319
Cultivators, Wheel and gang-plough	W. Hammond	55, 093
Cultivator blade, Attaching	J. L. Fountain	54, 522
Cultivator teeth to frames, Attaching	G. W. Zeigler	58, 533
Cultivator and ditcher, Combined	N. Hawkes	58, 819
Cultivator and gang-plough	W. W. St. John	60, 589
Cultivator and harrow, Combined	J. K. Minich	54, 648
Cultivator and harrow, Combined	A. H. Sheffer	54, 421
Cultivator and seed drill, Combined	A. Armstrong	58, 045
Cultivator and seeder, Combined	J. L. Fountain	54, 139
Cultivator and seeder, Combined	S. C. Schofield	56, 454

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Cultivator and seeder, Combined	W. J. Freeman	58, 243
Cultivator and seeder, Combined	J. Miller	55, 142
Cultivator and seeder, Combined	T. J. Price	57, 185
Cultivator and seeding machine	C. Denton	53, 525
Cultivator and seeding machine, Combined	A. Dodge	53, 960
Cups, Dental impression	G. F. Schaffer	53, 347
Cups, Dental impression	O. B. Butler	55, 465
Cups, Grease	G. Hagenmeyer	53, 973
Cups, Ink	P. K. Holbrook	59, 223
Cups, Lubricating for steam engines	M. Vergnes	58, 354
Cups, Oil	C. F. Davis	59, 976
Cups, Oil, Lubricating	J. H. Palmer	54, 070
Cups, Oil, Steam-engine	N. J. White	57, 418
Cups, Sponge	E. H. Howard and A. J. Manchester	58, 829
Cups, Sponge	S. B. Brague	52, 667
Cupboards, portable	J. L. Prescott	59, 516
Cupola and blast furnace	J. R. Grout	56, 746
Cupola or blast furnace	A. G. Cook	52, 684
Cupola and other furnaces	P. W. Mackenzie and C. W. Isbell	55, 204
Curd, Whey from, Separating	P. Coombs	52, 939
Curriers' scourer	J. Hankey	52, 491
Currying, Stuffing for, Preparing	C. L. Morehouse	55, 426
Curtains, blinds, and maps, Hanging	J. F. Landis	52, 577
Curtains, Carriage, Elastic button holes for	S. C. Talcott	59, 679
Curtains, Carriage, Knob hole for	C. W. Holland	59, 718
Curtains, Window	H. Foster	52, 555
Curtains, Window	W. H. Morrison	58, 668
Curtain eyelet	J. Starkey	59, 320
Curtain fixture	H. O. Baker	55, 978
Curtain fixture	L. Ross	60, 426
Curtain fixture	J. H. Barnes and T. W. Brown	53, 727
Curtain fixture	W. R. P. Cross	57, 096
Curtain fixture	G. M. White	57, 053
Curtain fixture	B. Handforth	59, 009
Curtain fixture	J. W. Taylor, jr	60, 087
Curtain fixture	W. A. Lamberson and T. O. Morton	52, 296
Curtain fixture	J. B. Bailey	55, 454
Curtain fixture	J. S. Stewart and S. B. Pierce	56, 630
Curtain fixture	J. Stevens and W. B. Fay	54, 434
Curtain fixture	G. W. Nell	55, 344
Curtain fixture	E. Mentz	54, 384
Curtain fixture	J. B. Tarr	53, 703
Curtain rollers, Hub or spool for	F. Pilling	53, 480
Cushion, Elastic, and guard for the feet of horses	W. H. Hall	54, 335
Cushion for billiard tables	L. Decker	60, 657
Cushions for car seats, Re-dyeing	T. Brown	56, 697
Cushion or mattress	L. Bauhoefer	59, 945
Cutlery	D. Fitzpatrick	52, 552
Cutlery	W. W. Robinson	56, 099
Cutlery, &c., Grinding	R. S. Gladwin	56, 403
Cutlery, Handles for	T. D. Lakin	57, 521
Cutlery, Handles for, Metallic	L. S White	53, 546
Cutlery, Manufacture of	G. Parr	60, 048
Cutlery, Table, Manufacture of	J. W. Gardner	53, 529
Cut-off, Rain-water	L. W. Doty	55, 072
Cutters, Bog	C. E. Steller	56, 822
Cutters, Bolt	O. J. Smith	59, 673
Cutters, Bread and meat	S. Kepner	53, 835
Cutters, Button-hole	G. H. Seymour and W. B. Barnard	57, 384
Cutters, Button-hole	J. A. and H. A. House	53, 619
Cutters, Button-hole	W. Lieber	57, 342
Cutter, Cake, Egg beater, and nutmeg grater	S. C. Moore	54, 388
Cutters, Cheese	J. Haines	56, 212
Cutters, Cornstalk	G. D. McClure	53, 848
Cutters, Cornstalk, and corn-husker	J. Russell	60, 643
Cutters, Cornstalk, and roller	R. R. Gaskill	55, 848
Cutters, Cornstalk, and stripper	N. Gabel	52, 282
Cutters, Feed	S. Pettibone	53, 179
Cutters, Feed	J. Massey	59, 043
Cutters, Feed	W. F. Altfather	58, 967
Cutters, Feed, and box	A. B. King	58, 649
Cutters, Fodder	T. Hazard	54, 899
utters, Gear	E. Parker	56, 149
Cutters, Gear	L. F. Grant	56, 495
Cutters, Hay and straw	W. Henshaw	53, 614
Cutters, Heel	O. H. and J. A. Marston	52, 430
Cutters, Meat	J. Derr	55, 251
Cutters, Meat and vegetable	E. P. Whitney	56, 305
Cutters, Meat and vegetable	J. Shepard	54, 223
Cutters, Meat, for sausages	J. Segondy	57, 197
Cutters, Paper, Bookbinders'	M. Riehl	58, 482
Cutters, Rivet and bolt	D. D. Robinson	55, 366
Cutters, Shoe-lacing	F. C. Sumner	52, 620
Cutters, Sod	S. A. Moody	58, 951

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Cutters, Stop, for cutting continuous sheets of paper into shorter ones.	G. Keeble	58,563
Cutters, Stove-blacking	W. W. Armington	53,724
Cutters, Straw	C. T. Frost	54,525
Cutters, Straw	L. B. Hoit	54,351
Cutters, Straw	R. Conarroe	58,778
Cutters, Straw	S. Pettibone	58,129
Cutters, Straw	J. W. Bartlett	58,974
Cutters, Straw	J. Eiberweiser and R. Weber	58,080
Cutters, Straw	A. Gordon	56,743
Cutters, Straw	J. Marehant	56,428
Cutters, Straw	J. H. Mumma	57,363
Cutters, Straw	M. Cole	53,416
Cutters, Straw	J. MeMahel	59,433
Cutters, Straw	J. Conner	52,537
Cutters, Straw	T. J. Price	52,199
Cutters, Straw	W. D. Schooley	60,069
Cutters, Straw	H. Gottfried	57,121
Cutters, Straw	C. Polley	55,703
Cutters, Straw	J. G. Perry	60,550
Cutters, Tube sheet	T. L. Webster	58,924
Cutters, Vegetable	F. Arnold	58,570
Cutters, Vegetable	A. T. Bleyley	53,262
Cutters, Vegetable	C. F. A. Bander	53,392
Cutters, Vegetable	D. Bearly	57,070
Cutter grinder	N. F. Stone	54,036
Cutter for dovetailing machines	J. C. Hursell	55,661
Cutter for wood-planing machines	C. Livington	56,424
Cutter and press, Tobacco	S. G. Riee	59,748
Cutting, coring, and paring machine	W. Weaver	53,754
Cutting board	R. C. Hussey	57,513
Cutting box	W. Green	52,992
Cutting bread, soap, and black-lead	W. B. Vincent	52,627
Cutting machine	M. H. Merriam and E. L. Norton	55,336
Cutting machine, Rotary	J. J. Butler	60,341
Cylinders, Expanding	P. Maltby	60,214
Cylinders of casks upon their heads to form tight barrels, Compressing.	W. Reid	55,363
Cylinders of wool-washing machine, Lifting	J. Petre and J. Teal	58,359
Cylinder for wool burring and carding machines	C. L. Goddard	56,038
Cylindrical structures, Double	D. L. Bartlett and G. H. Johnson	57,462
Cyphering machine	S. J. Kelso	58,347
D.		
Dams, Coffer	A. Gilmore	53,919
Dams and levels	B. Britten	57,852
Dampers, Stove	G. W. Walker	55,751
Dampers, Stove-pipe	R. S. Miller	57,544
Dampers, Stove-pipe	B. F. Cowan	53,379
Dampers, Stove-pipe	N. J. Eldred	58,233
Dampers, Stove-pipe	J. A. Jaeobs	56,566
Dampers, Stove-pipe	B. I. Harris	58,251
Dampers, Stove-pipe	W. W. St. John	52,460
Dampers, Stove-pipe	R. M. Breckenridge	56,891
Dampers, Stove-pipe	H. Ogborn and A. F. Chapin	57,368
Dampers, Stove-pipe	B. F. Miller	56,975
Dampers, Stove-pipe	C. R. Everson	60,160
Dampers, Stove-pipe	J. Fraser and O. S. Garretson	60,498
Dampers, Stove-pipe	D. L. Grover	53,605
Dampers, Stove-pipe	M. Hieks	55,101
Dampers, Stove-pipe	S. Marvin	53,925
Dampers, Stove-pipe	R. S. Sanborn and W. Bennett	53,886
Dampers, Stove-pipe	J. Barton	52,514
Dampers, Stove-pipe	J. C. Merritt	53,024
Dampers, Stove-pipe	S. R. Nye	54,197
Dampers, Stove-pipe	D. and S. Sweeney	54,976
Dampers, Stove-pipe	E. Parker	55,017
Dampers, Stove-pipe	W. H. Nutting	56,789
Dampers, Stove-pipe	H. H. Senniksen	57,778
Damper regulator, Steam, and indicator	C. H. Ford	52,114
Damper regulator for boiler furnaces	J. N. Neal and W. Myers	59,439
Damper and stove pipe	L. R. Comstoek	59,362
Damper for fireplaees, Adjustable	S. Albertson	59,789
Damper or draught regulator for stoves	S. Oppenheimer	60,412
Dead bodies, Preserving	J. Kunsman	55,013
Deflectors for car windows, Portable	J. C. Stoddard	54,436
Dentistry, Improvement in	W. Ballard	52,012
Dental anæsthetic instruments	E. Cutter	59,562
Dental plugging instruments	G. B. Snow and T. G. Lewis	59,284
Dental plugging instruments	G. B. Snow and T. G. Lewis	59,784
Dentists' tooth plugger	C. M. Hooker	58,257
Dentists' vuleanizer	C. H. James	56,945
Deodorizing offal	A. and E. Lister	52,863

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Derrick	D. D. Winant	52,777
Derrick Hay	W. P. Squire	59,870
Derrick for raising sunken vessels	S. Petrie	57,183
Diseases, Treating, by vacuum, Apparatus for	G. Hadfield	54,530
Desk, bureau, wardrobe, washstand, and bed, Combined	E. Hambujer	54,718
Desk, Reading	E. Kast	54,919
Desk, Revolving	C. Hope	55,492
Desk, Seat, for schools	I. N. Peirce	53,474
Desk, Stand, and bookholder	D. I. Stagg	55,925
Desk and chair, Combined	W. A. Ehlman	56,540
Desk and seat	D. I. Stagg	58,908
Desk and seat, School	C. W. Sherwood	59,466
Desk and seat, School	G. Munger	57,824
Desk and seat, School	G. W. Hildreth	55,293
Desulphurizing, Process for	J. Absterdam	52,120
Detectors, Low-water	J. Ashcroft	55,221
Detectors, Low-water	T. Firth	59,574
Detectors, Low-water	J. Delery	56,017
Detectors, Low-water	G. W. Hewitt and J. B. Haley	54,544
Detectors, Low-water	B. H. Bartol	60,463
Detectors, Low-water	M. Peck	52,194
Detectors, Low-water, for steam generators	T. Savill	58,179
Developing stick	T. C. Roche	52,748
Diamond holder	J. E. Karelsen	56,231
Dies, Clay-pipe	G. D. and H. A. Goodrich	58,851
Dies, Cutting, Screw	C. G. Cross	52,783
Dies, Watch	G. Hastings	54,539
Dies and shoes for grinding and amalgamating machines	F. G. Belknap	52,015
Dies and taps	F. S. Gregg	57,124
Dies for bolt-heading machines	J. Gribben	57,313
Dies for bolt-heading machines	J. W. Sibbett	57,781
Dies for braiding and embroidering	J. J. and E. D. Parker	58,470
Dies for capping and raising articles of metal	S. R. Wilmot	55,944
Dies for cutting and pointing wire	J. C. Plumer	59,778
Dies for forming articles of metal, Operating	E. J. Manville	55,425
Dies for forming gas pipes	J. Fieldhouse	54,643
Dies for forming head on the edge of sheet-metal vessels	S. R. Wilmot	56,313
Dies for forming metal heads on harness nails	F. Reynolds and F. L. Hilbright	55 536
Dies for forming the eyes of pickaxes	H. L. Lowman	60,022
Dies for forming the heads of wrenches	H. W. Pell	56,602
Dies for making hatters' irons	B. Hull	54,356
Dies for heading bolts	C. Kane	54,738
Dies for making eye-bolts for vessels	C. Norton	56,599
Dies for making square-bolt heads	J. Gribben	56,745
Dies for making T-head bolts	W. J. Lewis	54,377
Dies for manufacture of tin-lined pipe	W. A. Shaw	56,622
Dies for nut machines	O. C. Burdict	53,780
Dies for producing stove-pipe elbows, &c	F. Roshert	52,520
Dies for punching	O. C. Burdict	53,781
Dies for swaging hands for watches	G. Hastings	54,898
Dies for swaging pistol frames	C. E. Billings	56,885
Dies for swaging the ends of anger blanks	R. Jennings	55,498
Dies for welding links into chains	F. Van Patten and O. A. Anthony	55,560
Die apparatus, Rolling	H. Waters	59,488
Digger, Garden	R. R. Frohock	54,711
Digger, Stone or root	C. F. Smith	54,030
Dish, Butter	W. M. Whittaker	60,308
Dish, Drying	C. W. Schroeder	59,083
Dish drainer and dryer	R. W. Stone and H. A. Kendrick	53,055
Dish mop	A. S. Hadley	60,364
Dish washer	J. J. Sawyer	58,895
Dish-washing machine	J. Wheeler	53,511
Disinfectant	L. Broad	58,163
Disinfecting apparatus	J. M. Scudder	54,221
Disinfecting commode	H. J. Alvord	56,870
Disinfecting compound	H. Napier	57,174
Disinfecting and cooling, Apparatus for	S. C. Maine	60,212
Disinfectors	J. D. C. Outwater	57,559
Distillation	J. F. Collins	59,187
Distillation, Continuous	W. G. W. Jaeger	54,358
Distilling	H. A. Schesch	54,218
Distilling apparatus	S. R. Divine and C. A. Seely	55,071
Distilling apparatus	J. A. Coffey	60,477
Distilling apparatus	A. H. Tait and J. W. Avis	53,359
Distilling apparatus	C. H. Hall and J. Ellis	58,813
Ditcher and cultivator, Combined	N. Hawkes	58,819
Ditching machine	C. Freese	53,737
Ditching machine	J. H. Marshall and O. E. Mann	60,025
Ditching machine	D. Sawyer	59,140
Ditching machine	E. Heath	58,413
Ditching machine	H. E. Moon and J. Doan	58,871
Ditching machine	H. C. Ingraham	59,028
Ditching machine	J. Ballard and T. J. Magee	57,815
Ditching machine	I. S. Weaver	56,299

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Ditching machine	J. P. Reese and R. A. Graham	54,823
Ditching machine	W. M. Perkins	51,859
Ditching machine	J. C. Boyd	53,264
Ditching machine	T. R. Cook	53,950
Ditching machine	P. Lugenbell	57,160
Ditching machine	J. Stevens	57,050
Ditching machine	G. Jensen	58,834
Dividers or calipers, Making	J. B. Gooding	56,323
Diving apparatus, Gas in, Regulating flow of	B. Rouquayrol	59,529
Docks, Dry	J. W. Munger and W. O. Jones	57,550
Documents, Holding and filing	M. L. M. Hussey	56,941
Dolls, Fancy	D. Checkeni	52,782
Dolls, Manufacture of	F. E. Darrow	54,301
Dolls and toys	F. E. Darrow and D. E. Peck	52,142
Doors, Barn, Fastening	D. M. Minor	59,248
Doors, Closing	H. Smith	59,667
Doors, Hanging	G. W. Holly	58,827
Doors, Hatchway	M. S. Driggs	54,874
Doors, Stove	S. C. Batchellor	59,119
Doors, Stove	R. Simpson	55,020
Doors, Weather strip for	J. A. Smith	56,813
Doors, Weather strip for	F. C. Gridley	56,209
Doors, Weather strip for	A. E. Strobel	54,793
Door latch	W. H. Fowler	59,380
Door fastener	F. McDonough	59,431
Door fastener	G. E. Thompson	52,469
Door fastener, Portable	E. H. Janney and E. J. Hamilton	55,305
Door fastener and burglar alarm	F. Oakley	57,654
Door fastenings	F. Reed	59,653
Door fastenings	F. A. and A. J. Illingsworth	52,050
Door fastenings, Portable	D. Conlon	55,624
Door fastenings, Portable	L. S. Enos	55,477
Door guards	J. Tinkey	58,916
Door guards	N. C. Perry and G. S. Gladding	52,497
Door key fastener	S. Macferran	56,071
Door knobs to shanks, Fastening	G. Jones and B. E. Mead	59,609
Door knobs to spindles, Adjusting	T. Kennedy	55,115
Doors and shutters	S. G. Cabell	59,553
Doors and windows, Hanging	G. H. Lupton	60,023
Doors for puddling and other furnaces	N. L. Sibley and B. Shiverick	53,894
Dough, Mixing	G. Clark, jr., and L. P. Jenks	52,678
Dough, Raising	W. Leas	51,949
Dough kneaders	G. W. Sanders	55,718
Dough kneaders	J. C. Loveland	52,062
Dough kneader, meat pounder, &c	P. Perry	56,091
Dough mixer	J. M. Stanyan	58,691
Dough mixer	C. Chavanne	58,596
Dough mixer	S. J. Talbott	60,652
Dovetailing machine	J. S. L. Babbs	55,223
Dovetailing machine, Cutter for	J. C. Hursell	55,661
Draught attachment	C. W. Conolly	56,012
Drag, Ground	B. J. McAtee and J. H. Wirt	57,939
Drains, Effluvia from, Suppressing	W. Bryent	57,284
Drawers, Money	A. G. and P. M. Shults	58,490
Drawings, &c., Copying, Photographic process for	W. Willis	55,592
Dredge roller for oyster boats	C. T. Belbin	55,228
Dredging boat	W. H. Nobles	55,346
Dredge and sprinkler	M. Keep and S. R. Dummer	56,063
Dredging machine	T. Byrne	57,859
Dredging machine	W. H. Nobles	56,984
Dredging machine	J. Johnson	56,948
Dresses, Cutting	H. M. Carpenter	57,837
Dresses, Cutting	C. Dittenhafer	56,383
Dresses, Measuring and fitting	P. A. La Ment	57,254
Dress elevators	G. Kammerl and D. L. Bollerman	57,519
Dress elevators	I. Nathan	53,324
Dress elevator, Ladies'	S. A. Moody	57,950
Dressing rolls, Manufacture of	C. McBurney	53,465
Drills	M. Nottingham and W. Duncan	59,631
Drills, Dental	P. Soper	53,245
Drills, Dental	W. H. Gates	58,631
Drills, Feed motion for	G. F Case	59,963
Drills, Grain	E. Wagoner	60,096
Drills, Grain	J. McDonald	58,274
Drills, Grain	P. and P. J. Schmitt	54,219
Drills, Grain	J. Ingels	53,005
Drills, Grain	L. N. Warren	55,184
Drills, Grain	A. Putnam	55,707
Drills, Grain	J. H. Thomas and P. P. Mast	55,742
Drills, Grain, Tubes for	S. K. Lighter and T. Harding	59,422
Drills, Machine	N. P. Eddy	54,248
Drills, Potato	J. Croco	58,385
Drills, Ratchet	G. W. Bishop	57,466
Drills, Rock	J. Y. Smith	54,226
Drills, Rock	O. G. Warren	54,982

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Drills, Rock	S. F. Gates	55,277
Drills, Rock	L. P. Jenks and G. A. Gardner	55,307
Drills, Rock	J. C. Dickey	55,070
Drills, Rock	J. Greives	55,488
Drills, Rock	C. D. Foote	60,497
Drills, Rock	G. P. Ganster	53,599
Drills, Rock	L. M. Gilmore	53,602
Drills, Rock	J. W. Brooks, S. F. Gates, and C. Burleigh.	52,960
Drills, Rock	J. C. Dickey	53,586
Drills, Rock	W. R. King	53,305
Drills, Rock	P. Sweeney	51,902
Drills, Rock	J. D. Dale	52,827
Drills, Rock	H. Jung	52,292
Drills, Rock	C. H. Webb	54,454
Drills, Rock, Boring	L. Dow	51,814
Drills, Seed	H. V. Davis and G. W. Peabody	59,123
Drills, Seed	T. D. Price	59,263
Drills, Seed, Combined	J. Tedford	52,225
Drills, Seed, and cultivator, Combined	A. Armstrong	58,045
Drills, Stone	T. Woods	60,314
Drills, Suction	O. G. Warren	51,904
Drills, Twist, Cutting	W. Frost	56,033
Drills, Well	A. G. Coles	51,925
Drills, Well, Oil	G. R. Platt	54,011
Drills, Well, Oil	C. Forster	58,803
Drills, Wheat	C. W. Patton	59,638
Drills, Wheat	J. F. Harcourt	59,595
Drills, Wheat	G. Zorger	56,664
Drills, Wheat	A. Armstrong	57,842
Drills, Wheat	M. S. and J. S. Rickel	59,077
Drill attachment to turning lathes	J. McCrum	57,536
Drill cable meters	L. C. Bristol	53,564
Drill chucks	F. G. Johnson	56,059
Drill chucks	C. S. Wells and L. H. Mayott	53,368
Drill couplings	E. E. and C. T. Packer	55,895
Drill feed for artesian wells	T. J. Lovegrove	53,536
Drill head	W. W. St. John	51,980
Drill machine, Potato and	S. L. Spencer	57,207
Drill rods, Collars for	V. T. Priest	56,607
Drill stocks	D. F Hartford	54,069
Drill and wrench	N. Woodbury	52,106
Drill and blacksmiths' tongs, Combined	F. Nevergold and G. Stackhouse	55,696
Drill and crane attachment	I. S. Laubach	53,992
Drill and fertilizer, Combined	G. E. Cooper	55,243
Drill and sower, Combined	G. W. Hall	57,707
Drill for artesian wells	H. Palmer	54,199
Drill for boring	C. Mather	57,828
Drill for oil and other wells	H. Bateman and D. Cumming, jr.	52,816
Drill for rocks, wells, &c	R. S. Torrey	60,595
Drill for wells	H. W. Safford	60,261
Drill for wells	J. Grieves	52,164
Drill for wells	P. Ainsworth	59,740
Drill or well tube	J. Hutchins	59,608
Drilling, Shaft for	J. H. Clapham	54,112
Drilling machine	J. G. Hirzel	53,145
Drilling machine	T. M. Howard	53,981
Drilling machine	M. M. Ammidown	60,114
Drilling machine	R. Nutty	58,175
Drilling machine	T. P. Bashford	52,815
Drilling machine	R. A. Thomas	57,011
Drilling machine	F. Shaller	55,918
Drilling machine, Rock	C. Burleigh	59,960
Drilling machine, Rock	P. H. Lawrence	56,577
Drilling machine, Rock	G. F. Underhill	57,797
Drilling machine for wells	M. E. Abbott	54,836
Drilling machine for oil wells	G. Mott	55,693
Drilling rocks, Machines for	C. Burleigh	52,961
Drilling and driving machine	I. M. Rose	53,189
Drilling and hoisting machine	W. C. McGill and A. J. Gibson	53,022
Drilling or boring tools	L. Dow	52,148
Driving apparatus of metal or wood into the ground	W. W. Winter	52,799
Driving and drilling machine	I. M. Rose	53,189
Drop handle urn cocks	H. and E. L. Bailey	57,246
Drop-light fixture	S. B. H. Vance and E. M. Smith	55,212
Drug crushers, Portable	H. C. Becker	57,071
Drum, Stove-pipe	F. P. Hunt	54,911
Drum, Stove-pipe	J. P. Chaplin	52,966
Drum, Stove-pipe	H. B. Northrup and J. H. Patterson	52,366
Drum, Stove-pipe	E. P. Morse	53,029
Drum, Stove-pipe	J. Crimmins	53,954
Drum, Stove-pipe	M. Gage	53,806
Drum, Stove-pipe	H. G. Whitaker	55,939
Drum, Stove-pipe	W. Kroeger	55,419

Invention or Discovery.	Name of Patentee.	No.
Drum, Stove-pipe	H. Cook	52,685
Drum, Stove-pipe	E. E. Ruth and J. E. De Long	57,572
Drum, Stove pipe	B. F. Miller	56,774
Drum, Stove-pipe	C. C. Webber	56,473
Drum, Stove pipe	E. S. Blake	59,173
Drum, Stove-pipe	T. R. Cook	53,789
Drum, Stove-pipe, Revolving	L. R. Comstock	59,363
Drum and Stove	G. D. Greenleaf	58,811
Dry-dock indicator	P. F. Campbell	56,702
Dryer, Yeast-cake	C. Gleason	57,891
Dryer and drainer, Dish	R. W. Stone and A. J. Kendrick	53,055
Dryer for petroleum and heavy oils	S. F. Rogers	60,558
Drying apparatus	A. Stevens	56,823
Drying and evaporating device	W. Kendrick	54,173
Dumb waiter	R. W. Lawrence	57,928
Dumper, Fuel	J. Haines	58,248
Dust range or receptacle	A. Brigham	55,458
Dyes and colors, Manufacture of	G. H. Reed	54,957
Dyeing and printing textile fabrics and yarns	A. Paraf	60,546
E.		
Earth borer	M. C. Chamberlin	52,267
Eave troughs while soldering, Holding	E. Wilkinson, jr	57,237
Effervescing fluids from bottles, Removing	W. W. Meglone	57,256
Effluvia from drains, Suppressing	W. Bryent	57,284
Eggs, &c., Desiccating	J. B. Thompson	53,361
Eggs, Preserving	A. G. and E. E. Kyle	55,502
Eggs, Preserving	N. Patton	52,072
Egg beater	C. M. Drennan	58,165
Egg beater	V. G. Arnold	58,750
Egg beater	M. G. Crane	55,625
Egg beater	F. L. King	51,839
Egg beater	C. H. Butterfield	58,770
Egg beater	C. Pinder	58,882
Egg beater	T. Earle	54,134
Egg beater	L. B. Alden	56,845
Egg beater	A. R. Blasse	52,518
Egg beater	H. D. and J. H. Felthouse	53,429
Egg beater	A. M. Robinson	54,776
Egg beater	S. B. Pangborn and G. H. Griffin	54,761
Egg beater	F. Ashley	55,802
Egg beater	J. Davis	56,382
Egg beater, cake cutter, and nutmeg grater	S. C. Moore	54,388
Egg beater and grater	W. A. Bemis	55,807
Egg beater and liquor mixer	E. C. Strange	57,596
Egg beater and punch mixer	T. Fisher	53,965
Egg holder	F. Wegrather	53,712
Egg testers	F. B. Seeley	57,389
Ejector, Steam and air	S. E. Hewes	59,221
Electric piles, Secondary	G. G. Percival	53,666
Elevating hay, Horse-power apparatus for	F. Wicks	57,608
Elevators	T. B. Christman	58,715
Elevators	O. Tufts	60,442
Elevators	O. Tufts	60,441
Elevators	J. C. and J. W. Wandell	53,064
Elevators	G. Williams	56,481
Elevators, Coal	J. P. Tucker	55,557
Elevators, Dress	I. Nathan	53,324
Elevators, Dress	H. Essex and J. Johnson	55,842
Elevators, Dress, Ladies'	S. A. Moody	57,950
Elevators, Dress skirt	T. V. Phelps	56,341
Elevators, Grain	J. T. Parlour	54,822
Elevators, Hay	P. C. Ellsworth	58,541
Elevators, Hay	J. Gifford, jr	59,585
Elevators, Hay	J. L. Hubbell and E. Sherman	58,259
Elevators, Hay, Tackle-block for	F. Wicks and F. F. Fowler	57,610
Elevators, Skirt	H. N. Walter	58,920
Elevators, Water	J. Rymond	56,275
Elevators, Water	J. Tilley	53,505
Elevators, Water	J. C. Barrett	55,980
Elevators, Water	E. Hoyt	53,621
Elevators, Water	J. E. Cronk	52,824
Elevators, Water	G. Race	53,676
Elevators, Water	A. S. Babbit	55,977
Elevators, Water	J. E. Moeller	57,546
Elevators, Water	A. Woodworth	57,811
Elevators, Water	I. A. Pinnell	60,239
Elevators, Water	S. F. Jones	56,228
Elevators, Water	H. M. Smith	54,225
Elevators, Water	A. O. Remington and V. R. Stewart	58,888
Elevators, Water	J. Freret	58,093
Elevators, Water	S. L. Avery	54,276
Elevators, Water	L. Taylor	56,634

Invention or Discovery.	Name of Patentee.	No.
Elevators, Water	E. R. Austin	58,368
Elevators, Water	G. B. Curtis	58,019
Elevators, Water	W. E. Babcock	59,160
Elevators, Water, Railroad	W. H. Butler	55,816
Elevators, Water, Steam	D. Myers and S. H. Noble	53,469
Elevators, Water, Steam	J. B. Atwater	51,908
Elevators, Water, for wells	C. Gullmanex	56,553
Elevators, Water, for wells	A. T. Jones	54,557
Elevator guides	O. Tufts	60,443
Elevator and carrier, Track rope hay	E. H. Carpenter	52,676
Elevator and conveyer, Hay	N. D. Hinman	59,018
Elevator for ladies' skirts	C. Grün	58,406
Ellipses, Trammels for	C. Crow	53,524
Ellipsographs	H. M. Albee	60,609
Embossing machine	J. C. Arms	60,115
Embossing napkin rings	E. H. Eldridge and F. Leach	54,515
Emery, Crude, Separating from foreign substances	N. C. Sawyer	58,487
Emery wheels	T. Nelson	53,032
Engines	G. I. Washburn	57,228
Engines, Air	J. B. Atwater	53,097
Engines, Air	P. Chick	60,474
Engines, Air, Hot	W. Reinlein	55,971
Engines, Air, Hot	C. W. Baldwin	55,601
Engines, Air, Hot	S. H. Roper	55,428
Engines, Air, Hot	T. McDonough	52,305
Engines, Carding	T. McQuirk and O. Cole	59,919
Engines, Carding, Feeding device for	G. Bruce	60,338
Engines, Carding, Oiling wool for	J. H. Aiken	59,308
Engines, Carding, Operating the doffer comb of	A. A. Bennett	55,046
Engines, Carding, Spinning direct from the doffer of	T. Welham	59,106
Engines, Carding, Stripping top flats of	S. L. Crockett and B. T. Mills	58,989
Engines, Carding, Wool-oiling apparatus for	P. C. Kirk and M. Pendergast	60,386
Engines, Carding, Wool-oiling machinery for	W. H. Salisbury	58,556
Engines, Electro magnetic	A. P. Berlioz	58,960
Engines, Fire and pump	J. N. Dennison	54,247
Engines, Head light for	R. Budenbach	54,850
Engines, Hydraulic	J. Dreisorner	57,298
Engines, Hydraulic	H. Hubbell	57,512
Engines, Hydraulic	H. H. Stuart	56,120
Engines, Hydraulic	R. F. Fairlie	52,117
Engines, Locomotive	W. S. G. Baker	59,340
Engines, Locomotive, Sand boxes for	T. Price and J. H. Wilson	53,182
Engines, Oscillating	F. Brown	52,024
Engines, Oscillating	F. Brown	55,575
Engines, Oscillating, Valve gear for	H. T. Carter	52,677
Engines, Oscillating, Valve gear for	H. T. Carter	53,570
Engines, Paper, Grinding cylinders of	C. T. Frost	53,598
Engines, Rag, for paper making	J. M. Shew	60,645
Engines, Revolving cylinder	C. F. Ruset	58,891
Engines, Rotary	S. Sherman	58,900
Engines, Rotary	F. Chatelain	54,079
Engines, Rotary	W. J. Norton	54,006
Engines, Rotary	R. Hughes	55,301
Engines, Rotary	R. D. Wright	53,755
Engines, Rotary	H. I. Behrens	53,915
Engines, Rotary	S. G. Hall and G. W. Bugbee	55,092
Engines, Rotary, Steam	M. H. Collins	58,602
Engines, Steam	G. I. Washburn	57,799
Engines, Steam	W. H. Sangster and J. C. Ware	57,386
Engines, Steam	F. Latta	55,122
Engines, Steam	I. Ferris	53,596
Engines, Steam	W. M. Henderson	53,613
Engines, Steam	G. I. Washburn	54,983
Engines, Steam	W. C. Hicks	54,906
Engines, Steam	T. C. Robinson	52,078
Engines, Steam	G. B. Whiting	51,885
Engines, Steam	N. W. Wheeler	52,474
Engines, Steam	E. Savoral	52,451
Engines, Steam	T. A. Calvert	52,965
Engines, Steam	L. Huntoon	54,731
Engines, Steam	H. Goodrich and G. R. Edwards	56,404
Engines, Steam	W. L. Winans and T. Winans	55,516
Engines, Steam	J. R. Maxwell and E. Cope	56,242
Engines, Steam	G. H. Reynolds	58,478
Engines, Steam	A. Hartupee	54,150
Engines, Steam, Balance valves for	J. W. Carhart	53,410
Engines, Steam, Fibrous packing for	J. L. Husband	56,054
Engines, Steam, Governors for	T. Silver	58,491
Engines, Steam, Governors for	W. Nichols	57,953
Engines, Steam, Joints of, Paper packing for	J. Ross	59,456
Engines, Steam, Link motion for	N. P. Stevens	52,766
Engines, Steam, Lubricators for	J. Broughton	58,767
Engines, Steam, Lubricating cups for	M. Vergnes	58,354
Engines, Steam, Oil injectors for	G. B. Brayton	57,079

Invention or Discovery.	Name of Patentee.	No.
Engines, Steam, Operating	S. G. Cabell	56,898
Engines, Steam, Piston heads for	E. Sullivan	55,387
Engines, Steam, Plug valves for	W. H. Akens	52,511
Engines, Steam, Rotary	J. B. Bennett	59,166
Engines, Steam, Rotary	J. Collicott	53,731
Engines, Steam, Rotary	W. Goodwin	51,996
Engines, Steam, Rotary	M. Fletcher	58,086
Engines, Steam, Rotary	A. C. Baldwin	58,206
Engines, Steam, Valve device for	J. L. Dickinson	59,565
Engines, Steam, Valve gear for	N. W. Wheeler	52,475
Engines, Steam, Valve gear for	W. Dennison	58,074
Engines, Steam, Valves, &c	R. F. Hatfield	56,045
Engines, Toy, and whistle combined	W. W. Mildrum	52,872
Engines, Triangular beam	N. W. Wheeler	52,101
Engines, Trunk	J. B. Root	56,993
Engine head light	J. Radley	55,904
Engines and pumps, Rotary	D. D. Hardy	60,365
Engines and pumps, Rotary	D. D. Hardy and J. J. Morris	60,366
Engines for reducing rags, &c., to fibre	J. McCracken	57,355
Engines for the utilization of ammoniacal gas	J. Frot	60,500
Engines or motors, Air	P. A. Ensign	58,397
Engraving, Machine for	J. C. Guerrant and B. J. Field	60,506
Envelopes	E. Allen	57,617
Envelopes	R. Magee	59,849
Envelopes, Gumming and printing	T. V. Waymouth	55,562
Envelope, Metallic seal	R. S. Jennings	55,955
Envelope machine	T. V. Waymouth	58,327
Envelope machine	R. Parks	56,325
Envelope for bottles and jars	G. Clark	54,080
Eraser	R. Smith	57,004
Eraser	A. H. Hook and H. B. Adams	56,415
Eraser holder	W. P. Patton	57,370
Eraser and burnisher	S. R. Andres	57,273
Eraser and burnisher	A. G. Shaver	58,684
Eraser and pen, Combined	J. Schott	56,455
Eraser and pencil sharpener, Combined	C. D. Smith	58,558
Etching grounds, Producing	R. Gottegetreu	57,651
Evaporating, Vacuum vessel for	D. Bruee	55,812
Evaporating solution of sugar, salt, &c	O. Maedaniel	54,746
Evaporating or drying device	W. Kendriek	54,173
Evaporating and distilling liquids	J. Adair and H. C. Tweddle	56,343
Evaporators	F. Farquahar and R. E. Doan	58,236
Evaporators	T. Thomasson	54,231
Evaporators	J. E. Youngman	58,331
Evaporators	J. Cooper	58,607
Evaporators	S. Page	58,671
Evaporators	A. S. Eddy	57,301
Evaporators	D. Kinzer	57,923
Evaporators	J. and S. W. Little	57,523
Evaporators	B. R. Hawley	54,340
Evaporators	C. and D. Mercer	53,229
Evaporators	D. Reeves	53,873
Evaporators	G. W. L. Hazen	53,975
Evaporators	J. Beechley	52,952
Evaporators	F. M. Harris	51,828
Evaporators	J. H. Elward	52,402
Evaporators	S. B. Maulsby	53,318
Evaporators	L. R. Gleason	53,438
Evaporators	E. W. Taylor	56,464
Evaporators	S. B. Maulsby	56,585
Evaporators	W. H. Isaaes	57,327
Evaporators	J. F. Riggs	56,097
Evaporators	A. Balding	57,459
Evaporators	R. C. Nourse	57,954
Evaporators, Adjuster for	J. A. De Tar	53,422
Evaporators, Sorghum	C. T. and E. W. Moorman	53,028
Evaporators, Sorghum	T. T. Kneeland	54,366
Evaporators, Sorghum	P. C. Van Slyke	57,224
Evaporators, Sorghum	H. P. Nindę	54,196
Evaporator, Sugar	A. L. Bring	52,022
Evaporator and cooler	H. Köhly, jr.	53,226
Evaporator for hot-air pipes	J. L. Hutchinson	52,572
Eveners for poles for wagons	H. F. Willson	57,806
Excavating machine	C. Winegar	57,614
Exeavator	J. Bradley	57,038
Exeavator	D. Judd	56,229
Excavator	R. Slusser	60,268
Exercising machine	T. P. Thorpe	53,900
Explorer, Submarine	W. Mont Storm	54,438
Explosive eompound	A. Nobel	57,175
Extractor, Stump or stone	J. H. Green	53,294
Extractor, Tube, Oil well	J. H. Luther	52,866
Extracts, Making	J. Miller	52,253
Extracts, Making	J. Roberts	59,330

Invention or Discovery.	Name of Patentee.	No.
Extracts, Making	N. S. Thomas	57,217
Extracts of hops, &c., Producing	J. Schneider	55,915
Extracts from bark, &c., Making	F. W. Perry and J. H. Pierce	54,945
Eyes, Artificial	A. Boissorneau	55,793
Eyes, Sore, Remedy for	A. Schuster	51,868
Eye-glasses	E. Maynard	56,967
Eye-glass suspender	S. F. Merritt	58,867
Eye-water	M. Noll	55,889
Eyes and hooks	J. B. Martindale	60,026
Eyelets	E. B. Butler	56,897
Eyelets	T. Garrick	53,807
Eyelets	J. F. Richards	53,234
Eyelets	R. Leavitt	52,179
Eyelets	C. D. Smith	52,614
Eyelet, Curtain	J. Starkey	59,320
Eyelet, Curtain, Carriage	C. W. Acker	60,608
Eyelets, Making	E. E. Marsh	54,468
Eyelets, Making	W. R. Landfear	55,421
Eyelet blanks	S. W. Young	52,240
Eyelet machine	W. R. Landfear	53,080
Eyelet machine	I. E. Wilson and J. Lowe	54,240
Eyelet stock	J. W. Hoard	54,646
Eyeleting machine	G. Shipman	57,446
Eyeleting machine	A. A. Reed	53,926
Eyeleting machine	P. Harlow	60,000
F.		
Fabrics, Faded, Renovating	R. H. Klander	56,574
Fabrics Pile	J. W. Crossley	54,870
Fabrics, Punching, and introducing flat skirt wire therein	M. Fishel	55,267
Fabrics, Textile, Composition for cleansing and scouring	G. E. and E. L. Rolland	53,244
Fabrics, Textile, Printing	J. Green	56,208
Fabrics, Water-proof	J. Share	56,625
Fabrics, Water-proof	R. G. Allerton	52,124
Fabrics, Woven	G. Crompton	56,381
Fabrics, Woven	S. W. Baker	57,659
Fabrics for carpet and other purposes	T. Crossley	52,825
Fabrics for tubing, &c	T. R. White and W. G. Bedford	57,233
Fabric to be used as a substitute for japanned leather	J. Fletcher	57,307
Fans	G. Mallory	54,184
Fans	N. Harper	58,250
Fans	G. Anton	52,109
Fan, brush, and rack	B. Poulson	60,554
Fans, Circular paper or other, Binding	R. T. Smith	59,783
Fans, Fly	J. G. Schwemmer and T. Mueller	58,683
Fans, Ladies'	T. Welham	53,714
Fans, Ladies'	S. A. Grant	57,253
Fans, Ladies'	B. Todd	57,598
Fans, Paper, Folding	R. T. Smith	59,869
Fans, Ventilating, for gas-burners	H. Seher	60,566
Fan-blowers	P. Clark	58,985
Fan-blowers	F. Ortlieb	53,174
Fan and chair, Combined	F. Handschuh	56,214
Fans and parasols	W. H. White	54,799
Fan and rocking chair	G. Fleig	52,404
Fat, lard, &c., Cutting	C. Forschner	57,111
Faucets	G. R. Huntley	57,910
Faucets	J. Fahrney	57,818
Faucets	D. Drawbaugh	59,792
Faucets	D. Drawbaugh	59,793
Faucets	T. M. Coffin	58,600
Faucets	E. Candler	58,356
Faucets	J. Marchbank and W. H. Humphrey	59,426
Faucets	J. R. Street and S. M. Davis	60,082
Faucets	W. S. Cooper	59,122
Faucets	C. Schullian	56,105
Faucets	T. J. Thorn and J. Dennis, jr	57,220
Faucets	O. F. Morrill	60,223
Faucets	J. N. Smith	59,672
Faucets	C. E. Allan	59,939
Faucets, Basin	J. Hills	57,134
Faucets, Beer	C. Brown	56,357
Faucets, Beer	J. Firmenich	53,283
Faucets, Beer	J. Firmenich	51,820
Faucets, Beer	J. Jahrans	54,359
Faucets, Beer	J. Firmenich	54,707
Faucets, Beer	J. C. Baer	54,091
Faucets, Diaphragm	W. Blake	59,346
Faucets, Filtering	G. Hillegass	54,347
Faucets, Measuring	S. S. Wiles	60,104
Faucets, Measuring	E. Bigelow	54,282
Faucets, Measuring	H. L. and J. A. Buckwalter	58,592
Faucets, Measuring	J. G. Baker	56,342

Invention or Discovery.	Name of Patentee.	No.
Faucets, Molasses	W. H. Hartman	52,712
Faucets, Molasses	H. D. Blake	52,241
Faucets, Self-inserting	S. N. Haight	55,286
Faucets, Stop	W. Cleveland	53,271
Faucet measures	A. Vrooman	52,628
Feed-water apparatus	J. H. Pease	53,864
Felloes of wagon wheels, Dressing	A. P. Odholm	60,040
Felt, Fire-proof, for roofing and for other purposes	M. A. Johnson	60,381
Fence	S. H. Rose	58,300
Fence	B. Rowell	58,193
Fence	L. E. Lockling	58,848
Fence	B. Billings	60,127
Fence	E. Odell	56,985
Fence	D. Terry	57,408
Fence	W. H. Brown	56,895
Fence	W. Neely	57,366
Fence	C. Lee	57,735
Fence	S. Crocker	57,872
Fence	C. Seabaugh	57,581
Fence	T. Glover	60,358
Fence	E. C. Gordon	60,174
Fence	S. P. Tuttle	60,286
Fence	W. B. Shelton	60,576
Fence	J. Stone and S. Blocker	56,826
Fence	D. S. Evans	59,199
Fence	A. W. Olds	55,352
Fence	W. Tuttle, jr	58,003
Fence	E. Cozad	53,418
Fence	S. H. Mitchell	55,883
Fence	T. E. King	55,874
Fence	A. Jackson	52,051
Fence	J. F. Warner	52,629
Fence	J. E. Kendeigh	53,153
Fence	S. P. Williams	54,989
Fence	J. Edmunds	52,981
Fence	A. W. Olds	56,441
Fence	C. B. Hunting	52,717
Fence	S. Sanders	52,611
Fence	M. Dickle	52,828
Fence	R. Prouty	52,795
Fence	W. D. Hillis	53,616
Fence	E. York	54,459
Fence	C. G. Lazear	60,020
Fence	J. Bundy	59,176
Fence	G. Kicherer	58,432
Fence	C. C. Mather	59,427
Fence	J. Whiteside	58,013
Fence	J. W. Shankland	58,308
Fence, Farm	J. S. Bettis	57,073
Fence, Field	J. W. Larmore	56,766
Fence, Field	A. Fanckboner	59,900
Fence, Field, Portable	M. Hall	55,091
Fence, Picket, Portable	A. L. Thorp	56,465
Fence, Portable	G. C. Wright	59,114
Fence, Portable	A. Brooker	55,051
Fence, Portable	J. Breneman	56,695
Fence, Portable	F. C. Class	59,185
Fence, Portable	G. S. Carlisle	57,672
Fence, Portable	C. Rowland	52,080
Fence, Portable	J. Thompson	54,794
Fence, Portable	E. D. Montrose	54,754
Fence, Portable	J. Reeday	54,772
Fence, Portable	J. K. Staman	55,926
Fence, Wire, Staples for, Holding and driving	A. C. Betts	56,884
Fence, Wire, Tightening	P. S. Crawford	54,119
Fence posts, Driving	J. Anderson	52,811
Fertilizer	J. Gould	52,844
Fertilizer	J. and A. Hursh	55,871
Fertilizer-sower	W. H. and J. S. Lakin	52,295
Fertilizer and drill, Combined	G. E. Cooper	55,243
Fertilizer and seeder, Combined	S. Guild	52,563
Fibres, Disintegrating	C. Heaton	53,247
Fibres, Disintegrating	C. Heaton	53,248
Fibres, Extracting, from China grass, &c	J. Stewart	59,331
Fibres, Twisting and winding	H. Parmelee	56,258
Fibres, Vegetable, Preserving	T. P. Shaffner	55,371
Fibres, Vegetable and animal, Bleaching	C. M. E. du Motay and C. R. Marechal.	57,649
Fibrous material, Bleaching	H. M. Baker	58,935
Fibrous material, Picking and opening	S. Baxendale	58,711
Fibrous material, Sizing	W. Fuzzard	60,167
Fibrous substances to pulp, Reducing	H. B. Meech	56,971
Files	W. T. Nicholson	58,025
Files, Cutting	E. Bucklin, jr	52,926

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Files, Cutting	A. Chambers	53, 113
Files, Cutting	J. C. Cooke	52, 804
Files, Cutting	G. Miller	53, 650
Files, Cutting	A. Weed	53, 204
Files, Hardening	J. Russell	52, 450
Files, Letter box	T. K. Sterrett and W. R. Farrell	59, 287
Files, Newspaper	J. W. Foard	54, 320
Files, Repairing	A. A. Dunk	56, 734
Files, Stripping	T. Coldwell	57, 869
File blanks, Rolling	J. B. Mignault	53, 025
File blanks, Rolling	P. D. Cummings	59, 561
File blanks, flyers, and other metallic articles of small dimensions, Rolling, shaping, and forging.	J. Dodge	54, 310
File clasps for documents, &c	I. S. Richardson	52, 323
File cutting machine	J. Rotherham and J. Holden	54, 606
File cutting machine	H. B. Comer	57, 680
Filing machine	A. G. Burton and H. W. Covert	59, 741
Filters	N. Downes	56, 193
Filters	F. P. Griffiths	54, 894
Filters	B. Best	53, 395
Filters	H. Flad	53, 287
Filters	T. Simons	59, 467
Filters	C. F. Mietzsch	58, 868
Filters	T. Hayes	60, 512
Filters, Pump	S. D. Richardson and T. S. Hughes	52, 204
Filters, Sirup	J. L. Smith	53, 693
Filters, Well and cistern	W. H. Wiley	60, 311
Filter and cooler, Combined	H. T. Woodman	58, 530
Filter for petroleum	G. W. Sylvester	60, 593
Filter for sirups	P. and H. A. Perdew	58, 472
Filter for well tubes	W. A. Sharpe	54, 417
Filtering apparatus	J. P. Gruber	53, 606
Filtering machine and percolator, Continuous	P. H. Vanderweyde	60, 445
Finger nails, Instrument for cutting	C. C. E. Schwartz	54, 966
Fires, Extinguishing	C. Alden	59, 156
Fires, Extinguishing	W. C. Marshall	54, 748
Fires, Extinguishing	J. R. Laurent	59, 847
Fires, Kindling material for	C. A. Rose	57, 774
Fire alarm	E. Fontaine and O. A. Simons	59, 579
Fire alarm	A. Fontaine	59, 379
Fire-alarms, Telegraphic	G. W. Shawk, S. C. Morley and L. D. Cushman.	57, 981
Fire-arms, Breech-loading	H. Reynolds	54, 600
Fire-arms, Breech-loading	T. Yates	60, 607
Fire-arms, Breech-loading	B. F. Joslyn	51, 837
Fire-arms, Breech-loading	P. Bourdereaux	59, 706
Fire-arms, Breech-loading	I. Bradley	56, 890
Fire-arms, Breech-loading	J. H. Selwyn	57, 269
Fire-arms, Breech-loading	A. M. Bacon	56, 846
Fire-arms, Breech-loading	E. B. Stoddard	59, 500
Fire-arms, Breech-loading	R. McChesney	58, 444
Fire-arms, Breech-loading	D. Williamson	58, 525
Fire-arms, Breech-loading	I. M. Milbank	55, 520
Fire-arms, Breech-loading	J. Burke	55, 613
Fire-arms, Breech-loading	A. Henry	52, 654
Fire-arms, Breech-loading	W. H. Robertson and G. W. Simpson	53, 187
Fire-arms, Breech-loading	W. H. Miller	59, 723
Fire-arms, Breech-loading	I. M. Milbank	52, 734
Fire-arms, Breech-loading	J. Rider	53, 543
Fire-arms, Breech-loading	F. Clark	53, 522
Fire-arms, Breech-loading	B. S. Roberts	52, 887
Fire-arms, Breech-loading	C. E. Billings	54, 100
Fire-arms, Breech-loading	J. V. Meigs	54, 934
Fire-arms, Breech-loading	H. F. Wheeler	55, 752
Fire-arms, Breech-loading	A. Sayer	55, 719
Fire-arms, Breech-loading	T. T. S. Laidley and C. A. Emery	54, 743
Fire-arms, Breech-loading	J. Lee	54, 744
Fire-arms, Breech-loading	T. L. Sturtevant	60, 592
Fire-arms, Breech-loading	J. Burke	54, 680
Fire-arms, Breech-loading	G. P. and G. F. Foster	56, 399
Fire-arms, Breech-loading	H. Berdan	52, 925
Fire-arms, Breech-loading	F. D. Newbury	51, 959
Fire-arms, Breech-loading	H. Berdan	51, 991
Fire-arms, Breech-loading	F. Beals	52, 258
Fire-arms, Breech-loading	W. C. Dodge	52, 547
Fire-arms, Breech-loading	H. H. Walcott	60, 106
Fire-arms, Breech-loading	J. N. Aronson	59, 540
Fire-arms, Breech-loading	J. A. Conover	56, 669
Fire-arms, Breech-loading, Cartridge retractor for	J. W. Cochran	52, 679
Fire-arms, Double-barrelled	E. Whitney	59, 110
Fire-arms, Fitting lock plate to stock of	G. Henry	60, 188
Fire-arms, Magazine	N. King	57, 636
Fire-arms, Magazine	C. M. Spencer	58, 738
Fire-arms, Magazine	O. F. Winchester	57, 808
Fire-arms, Magazine	J. Gray	54, 068

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Fire-arms, Magazine	H. W. Hayden	56, 939
Fire-arms, Magazine	C. M. Spencer	58, 737
Fire-arms, Magazine	V. Fogerty	59, 126
Fire-arms, Magazine	W. C. Dodge	58, 790
Fire-arms, Magazine	G. W. Briggs	58, 937
Fire-arms, Magazine	J. D. Smith	52, 933
Fire-arms, Magazine	N. King	55, 012
Fire-arms, Magazine	J. D. Smith	52, 934
Fire-arms, Many-barrelled	W. J. Christie	58, 064
Fire-arms, Revolving	A. Christ	57, 864
Fire-arms, Revolving	S. H. Roper	53, 881
Fire-arms, Revolving	A. L. Munson	59, 629
Fire-arms, Revolving	B. F. Joslyn	51, 836
Fire-arms, Revolving	W. Mason	53, 539
Fire-arms, Revolving	P. Polain	53, 548
Fire-arms, Revolving	G. G. Crowell	53, 955
Fire-arms, Revolving	W. Tibballs	55, 743
Fire-arms, Revolving	W. Tibballs	56, 466
Fire-arms, Revolving	E. Whitney	51, 985
Fire-arms, Revolving	H. S. Josselyn	52, 248
Fire-arms, Revolving	C. A. Converse and S. S. Hopkins	57, 622
Fire-arms, Revolving	B. T. Looms	52, 582
Fire-arms, Revolving	J. B. Doolittle	54, 065
Fire-arms, Revo ving	J. H. Vickers	57, 448
Fire-arms, Revolving, Cartridge retractor for	S. W. Wood	52, 105
Fire-arms, Revolving, Cartridge retractor for	H. Hammond	52, 165
Fire-arms, Stock of, Adjustable	C. W. Jones	56, 506
Fire-arms and ordnance	R. White	57, 607
Fire-boxes for steam generators	C. F. Juriet	52, 945
Fire-engines, Nozzles for	C. Burchardt	53, 109
Fire-engines, Nozzle for	C. Oyston	53, 175
Fire-escape	J. A. Chambers	56 206
Fire-escape	W. L. Horne	56, 417
Fire-kindling	W. F. Wenisch	56, 867
Fire-kindling composition	M. Carrstens	53, 270
Fireplace	G. Moody	52, 375
Fireplace	A. Moon	52, 735
Fireplace	T. McCleary	59, 620
Fireplace	I. H. Upton	59, 484
Fireplace	W. T. McMillen	60, 220
Fireplace	F M. Rogers	53, 880
Fireplace, Open	M. D. Wellman	60, 601
Fire-shield	J. Lee	60, 390
Fi hooks	H. B. Livermore	51, 951
Fishing apparatus	P. H. Ferl and W. Larkins	56, 917
Fishing-line reels	A. B. Harthill	56, 937
Fishing-line sinkers	L. A. Burnham	58, 211
Fishing-line sinkers	J. R. Martin	56, 857
Fishing-lines and other small cords	P. Brooks	59, 120
Fishing rod	R. N. Isaacs	58, 833
Fishing tackle	W. D. Chapman	54, 684
Fish to pass over dams, Means for	D. Stick	55, 929
Fishway	A. Livermore	57, 159
Flange	D. Paterson	56, 326
Flange for privy bowls, Detachable	R. Diven	60, 153
Flasks, Moulders'	E. C. Little	58, 173
Flasks, Mould rs'	J. G. Holliday	57, 903
Flasks, Moulders', Hinges for	E. C. Little	58, 948
Flasks, Vulcanizing,	A. B. Woodward	52, 107
Flasks, Vulcanizing	D. J. Peer	53, 667
Flasks, Vulcanizing, for dentists	E. T. Starr	57, 210
Flasks, Vulcanizing, for dentists	L. Hoffstadt	57, 135
Flasks, for casting steel ingots	Z. S. Durfee	56, 388
Flat-iron	J. Alexander	52, 512
Flat-iron	T. Butters	52, 529
Flax, Breaking and cleaning	S. A. Clemens	59, 503
Flax, cotton, &c., Treating	C. W. and O. G. Newton	52, 877
Flax, Gathering and loading	G. W. Hatch	60, 185
Flax, hemp and straw, Treating	T. Gray	60, 177
Flax, Scutching	H. Black	55, 232
Flax, straw, &c., Straightening, braking, and cleaning	S. A. Clemens	59, 501
Flax, Tangled, Straightening and threshing	S. A. Clemens	59, 502
Flax, Threshing	S. A. Clemens	59, 360
Flax dressing machine	D. S. Abbott	55, 445
Flax spinning machine	L. Skeels	52, 506
Flax, or hemp or flax waste, Enveloping in long staple	J. Leinweber	54, 375
Float for boats, Collapsible	J. Macdonough	53, 461
Floats for boats	A. T. Boon	53, 775
Floors, Covering for	C. Keen	58, 171
Floor ,Malt-kiln	G. Taylor	57, 997
Floor Skating	H. P. Gengembre	59, 906
Floor attachment for furniture	H. Cole	53, 415
Floor clamp	A. Lloyd	55, 424
Floor cloths	J. B. Hodgskin	51, 830
Floor cloths	G. F. Hopper	51, 832

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Floor, Covering	J. H. Spencer	58,497
Flour, grain, &c., Preserving	J. Carlin	58,374
Flour bolts	A. R. Smith	60,073
Flour bolts	J. C. Blythe	56,887
Flour bolts and bran dusters	A. Burbank	53,268
Flour dipper, measurer and sifter	G. G. Carver	54,857
Flour measurer and sifter	G. G. Carver	52,266
Flour packers	L. W. Teeter	59,872
Flour packers	J. Musser	55,885
Flour packers	I. Cook	55,063
Flour packers	G. A. Warner	58,325
Flour packers	O. Place	56,605
Flour sifter	D. T. Robinson	51,901
Flour sifter, mixer, and kneader	E. A. Adams	59,335
Flower pots, Support for	T. Prince	52,200
Flue cleaner, Revolving	G. E. Bingham	60,128
Flues and setting of open boilers, Improvements in	J. Chilcott	51,922
Fluids, Burning	J. B. Scott	58,180
Fluids, Burning	G. W. Spangle	58,905
Fluids, Burning	E. D. Seely	57,390
Fluids, Burning	G. H. Mellen and J. C. Hazleton	57,749
Fluids, Burning	W. B. Rogers	60,559
Fluids, Burning	J. P. Cross	57,095
Fluids, Burning	D. Mansfield	55,880
Fluids, Burning	A. C. Vaugham	53,709
Fluids, Burning	J. Jann	57,727
Fluids, Burning	J. Jann	52,574
Fluids, Burning	B. H. Chadbourne	59,182
Fluids, Burning, Manufacture of	W. Corfield	54,061
Fluids, Burning, Manufacture of	W. Corfield	54,060
Fluids, Burning, Preparing	R. E. Campbell	59,177
Fluids, Burning, For illumination, Compound	H. B. Brace and W. T. Swart	54,495
Fluids, Hair-curling	R. Clark	54,115
Fluids, Washing	A. A. Enqvist	58,997
Fluid regulator	W. A. Simonds	54,424
Fluids from bottles, Effervescing, Removing	W. W. Meglone	57,256
Flutes, &c	S. C. Goodsell	58,022
Fluting machine	C. A. Sterling	57,403
Fluting machine	S. Knox and W. D. Corrister	53,633
Fluting machine	H. K. Cole	55,469
Fluting machine	S. R Knox	59,913
Fly-nets, Cutting	A. D. Hoffman	55,860
Flywheel and crank-shaft, Combined	E. B. Jucket	59,032
Fly and mosquito bar	T. H. Jennings	53,149
Flyers, file blanks, and other metallic articles of small dimensions, Rolling, shaping, and forging.	J. Dodge	54,310
Flyers for spinning	G. Richardson	53,874
Flyers for spinning machinery	C. Hyde	53,449
Flyers for roving-frames	T. Mayor	57,938
Flying machine	J. Wootton	54,992
Foot warmer	C. R. Everson	59,374
Foot warmer	J. H. Parsons	52,593
Foot warmer and lantern, Combined	W. F. Bartlett	59,810
Foot warmer and reflecting lamp	C. S. Merwin and C. A. Metcalf	58,453
Forging apparatus	J. G. N. Alleyne	59,940
Forging apparatus	A. Rix	52,447
Forging, shearing, and punching device	J. E. Emerson	55,263
Forging apparatus, Blacksmith's	L. and I. Andrews	60,458
Forks, Grain	M. C. Remington	56,328
Forks, Hay	W. T. Rundell	60,065
Forks, Hay	W. H. Elliott	59,570
Forks, Hay	J. A. Montgomery	52,186
Forks, Hay, Horse	L. M. Roby	53,878
Forks, Hay, Horse	C. W. Willis and A. Stephenson	54,050
Forks, Hay, Horse	J. K. O'Neil	53,660
Forks, Hay, Horse	T. C. Craven	55,824
Forks, Hay, Horse	W. S. Spratt	57,789
Forks, Hay, Horse	C. C. Bloodgett	60,467
Forks, Hay, Horse	A. J. Laird	57,337
Forks, Hay, Horse	F. Wicks	57,609
Forks, Hay, Horse	E. Shorkley	57,199
Forks, Hay, Horse	D. Figge	57,110
Forks, Hay, Horse	F. F. Fowler	57,114
Forks, Hay, Horse	H. Fisher	56,739
Forks, Hay, Horse	S. and D. Harris	56,936
Forks, Hay, Horse	J. B. Drake	56,851
Forks, Hay, Horse	A. V. Ryder	57,193
Forks, Hay, Horse	T. H. Arnold	59,539
Forks, Hay, Horse	J. K O'Neil	59,633
Forks, Hay, Horse	S. Rogers	59,139
Forks, Hay, Horse	A. Gordon	58,635
Forks, Hay, Horse	J. K. O'Neil	55,528
Forks, Hay, Horse	H. Kauffman	59,033
Forks, Hay, Horse	T. Foster	53,288
Forks, Hay, Horse	I. T. Price	55,902

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Forks, Hay Horse	E. and A. Buckman	52, 134
Forks, Hay, Horse	H. Fisher and M. Ball	53, 286
Forks, Hay, Horse	S. Rogers	53, 345
Forks, Hay, Horse	C. N. Culver	55, 246
Forks, Hay, Horse	R. W. Liscomb	52, 060
Forks, Hay, Horse	A. B. Sprout	54, 431
Forks, Hay, Horse	J. B. Stewart	54, 435
Forks, Hay, Horse	B. F. Hisert	52, 805
Forks, Hay, Horse	H. Maycock	52, 808
Forks, Hay, Horse	D. Lippy	51, 950
Forks, Hay, Horse	E. Gilliam	55, 278
Forks, Hay, Horse	F. Nishwitz	56, 439
Forks, Hay, Horse	F. Nishwitz and B. S. Hyers	56, 440
Forks, Hay, Horse	J. S. Brown	56, 359
Forks, Hay, Horse	A. J. Cooley	56, 375
Forks, Hay, Horse	A. C. Briggs	56, 170
Forks, Hay, Horse	A. Whitmarsh	53, 070
Forks, Hay, Horse	J. F. Pierce	53, 085
Forks, Hay, Horse	P. A. Wise	55, 408
Forks, Hay, Horse	T. H. Arnold	55, 035
Forks, Hay, Horse	J. K. O'Neil	54, 007
Forks, Hay, Horse	E. L. Walker	54, 044
Forks, Hay, Horse	H. Neumeyer	59, 859
Forks, Hay, Horse	T. Lloyd	58, 110
Forks, Making	H. B. Kinney	56, 954
Forks, Potato	J. S. Patterson	59, 061
Forks, Shoulders on, Forming	J. C. Batchelder	53, 258
Forks, spoons, &c., Manufacture of	D. J. Fleetwood	56 337
Forks, Table	J. D. Edmond and W. W. Wirt	55, 632
Forks, Table	C. A. Durgin	54, 514
Fork and cake lifter	P. L. Suine	60, 650
Fork and knife	J. D. Frary	58, 242
Fork and knife	J. B. H. Leonard	58, 269
Fork and knife	F. C. Beach and A. A. C. Klaucke	57, 662
Fork and knife, Combined	J. S. Jennings	57, 918
Fork and knife scourer	R. R. Pattison	53, 863
Fork and spade	L. Duvall	53, 127
Fork for digging potatoes	H. Doolittle	58, 390
Fountains, Portable	T. H. Bonham	54, 494
Frames, Alphabet	E. B. Nourse	58, 463
Frames, Carpet-bag	G. Havell	55, 200
Frames, Carpet-bag	P. Born	56, 168
Frames, Carpet-bag	C. and Z. Walsh	57, 262
Frames, Oval, Jointing	D. Garrison	54, 890
Frames, Oval, Preparing for gilding	L. Reinaur	53, 338
Frames, Travelling bag	N. Groel	56, 930
Frames for forming hoop-skirts	H. S. Loper	58, 949
Frames for hoop-skirts	A. Raffel	52, 602
Frames for mosquito canopies	I. E. Palmer	58, 283
Frames for printing photographic pictures	T. E. Sexton	54, 416
Frames for securing liquor and other bottles	F. Miller	53, 540
Frames for travelling bags	L. Fruhinsfeld	57, 438
Frames for travelling bags	C. and Z. Walsh	60, 448
Freezer, Ice cream	J. R. Champlin	55, 820
Freezer, Ice cream	M. G. Crane	59, 366
Freezer, Ice cream and churn	T. W. Pomeroy	55, 960
Friction clutch for machinery, Spiral	J. Hauley	60, 509
Freight, Receiving and discharging	N. Patterson	57, 825
Frogs, Railroad	W. J. Wharton	52, 099
Frogs, Railway	P. Quinn	53, 673
Frog and switch for railway, Combined	P. Quinn	53, 675
Fruit, Gathering	W. H. Stone	57, 008
Fruits, meats, and other substances, Preserving	E. S. Bartholomew	60, 462
Fruits, Preserving, Refrigerator building for	J. A. Boyer	57, 670
Fruits, &c., Drying	R. N. Allen	59, 806
Fruit dryer	W. D. Fisher and W. Holly	57, 885
Fruit dryer	G. R. Nebinger	56, 982
Fruit dryer	J. I. Boon	51, 792
Fruit gatherer	H. L. Scott	60, 565
Fruit gatherer	C. R. Roberts and J. S. Hartzell	60, 249
Fruit gatherer	Y. W. Smith	57, 785
Fruit gatherer	F. J. Rauschert	57, 766
Fruit gatherer	I. T. Carpenter	57. 473
Fruit gatherer	Z. S. Kelsey	57, 731
Fruit gatherer	S. Mellinger, jr	56, 972
Fruit gatherer	A. R. Dinsmore	57, 685
Fruit gatherer	E. H. Newcomb	55, 150
Fruit gatherer	J. A. Daum	54, 696
Fruit gatherer	E. Gilliam	54, 527
Fruit houses and granaries	S. R. Beckwith	53, 101
Fruit picker	L. Richards and D. Lincoln	39, 655
Fruit picker	C. M. and W. F. Lunt	57, 741
Fruit picker	J. Neff, jr	57, 553
Fruit picker	E. Evans	57, 106
Fruit picker	J. F. Saiger and A. Davis	60, 561

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Fruits and vegetables, Preserving	E. G. Holden	59, 396
Fruits and vegetables for preserving, Preparing	A. Eckert	52, 980
Fuel, Artificial	W. Halsted	57, 708
Fuel, Artificial	S. D. Gilson	57, 890
Fuel, Artificial	H. G. Dayton	59, 791
Fuel, Artificial	R. Fish	53, 431
Fuel, Artificial	S. D. Hovey	51, 833
Fuel, Artificial	E. Sharpe	54, 832
Fuel, Artificial	A. de Lentilhac	52, 397
Fuel, Artificial	C. Saffray	55, 367
Fuel, Composition for	F. Stoker	54, 477
Fulminating composition	G. Boldt	55, 793
Fumigator	I. Hutchins, jr.	59, 025
Funnels	C. L. Lochman	57, 347
Funnels, Alarm	J. Sholl and J. Collins	55, 544
Funnels, Measuring	J. Lloyd	53, 841
Funnels, Measuring	J. W. Clark	56, 710
Funnels, Measuring	W. E. Keene	59, 034
Funnels, Measuring	A. H. Whitney	55, 941
Funnels, Sorghum	A. Bare	54, 279
Funnels, measures	C. W. Fuller	57, 494
Funnels and cocks, Combined	A. Y. Wilson	53, 074
Funnel and measure, Combined	E. Gratten	59, 590
Furs, hides, skins, &c., Preparing	J. A. Roth	55, 715
Furs, Treating	A. C. Brush	52, 133
Fur blowers	R. Wildman	53, 071
Furnace	W. Ennis	55, 079
Furnace	G. E. Reynolds	54, 409
Furnace	J. H. Mearns	58, 863
Furnace	J. T. McDougall	60, 219
Furnace, Air, Hot	H. Whittingham	57, 026
Furnace, Air, Hot	H. Whittingham	57, 028
Furnace, Air, Hot	H. Whittingham	57, 027
Furnace, Air, Hot	H. G. Dayton	56, 727
Furnace, Air, Hot	E. Webster	55, 564
Furnace, Air, Hot	B. Brownwell	58, 057
Furnace, Air, Hot	J. T. Budd	58, 373
Furnace, Air, Hot, Heat regulator for	A. H. Tingley	59, 294
Furnace, Air, Hot	J. H. Schwein	52, 648
Furnace, Air, Hot	J. Chilcott	51, 921
Furnace, Air, Hot	L. W. Brown and I. L. Frankem	52, 671
Furnace, Air, Hot	S. W. Norton	52, 738
Furnace, Air, Hot	T. Wallace	54, 795
Furnace, Annealing	H. W. Moore	58, 666
Furnaces, Blast	S. C. Salisbury	54, 215
Furnace, Blast and cupola	J. R. Grout	56, 746
Furnace, Blast, or cupola	A. G. Cook	52, 684
Furnace, Boiler, Damper regulator for	J. F. Neal and W. Myers	59, 439
Furnace, Boiler, Steam	J. H. Webster	53, 367
Furnace, Combustion, Promoting	C. Fisher	58, 239
Furnace, Cupola	J. and T. Insul	54, 552
Furnace, Cupola	C. Truesdale	54, 470
Furnace, Cupola	C. Truesdale	60, 440
Furnace, Cupola, and other	P. W. Mackenzie and C. W. Isbell	55, 204
Furnace, Decarbonizing	S. H. Whitaker	59, 301
Furnace, Forge	B. Hotchkiss and H. Shattuck	58, 346
Furnace, Fuel to, Feeding	J. D. Whelpley and J. J. Storer	59, 695
Furnace, Generator, Steam jets for	D. M. Nichols	59, 055
Furnace, Grate bars for, Hollow	G. S. Nevins	52, 189
Furnace, Heating	C. R. Rand	57, 187
Furnace, Melting	S. A. Whitney	60, 307
Furnace, Pipe-welding	J. Fieldhouse	56, 919
Furnace, Puddling	J. Snyder	58, 904
Furnace, Puddling	D. and J. Hall	59, 214
Furnace, Puddling	G. A. Whipple	36, 333
Furnace, Puddling	C. D. Baker	52, 813
Furnace, Reverberating	J. M. Whiteside	60, 654
Furnace, Reverberatory and other blast	J. R. Grout	56, 552
Furnace, Regulating the draught of	A. H. Mershon	55, 138
Furnace, Smelting	J. L. Gill, jr.	57, 701
Furnace, Smoke, for curing meat	J. J. Barringer	59, 809
Furnace, Tinman's	S. Timmins	53, 362
Furnace doors, Opening	H. Fessler and H. Maxell	58, 799
Furnace-door regulators	O. A. Dodge	52, 695
Furnace grate bar	G. O. Tupper	53, 903
Furnace slag, Granulating	C. E. Morris and J. Eymon	56, 595
Furnace and boilers	H. McClure	58, 552
Furnace and range, Combined	W. A. Greene	56, 041
Furnace for annealing sheet-iron, &c	J. Malone	55, 014
Furnace for calcining gypsum	F. Godfrey	57, 892
Furnace for desulphurizing ores	W. Bruckner	60, 134
Furnace for desulphurizing ores	T. D. Worrall	56, 842
Furnace for puddling, heating, &c.	O. F. Mayhew	56, 425
Furnace for smelting copper	J. Davies	56, 7

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Furnace for steam boilers	J. F. Myers	60,229
Furnace for steam boilers	J. Chilcott	51,923
Furnace for treating auriferous ores	A. E. Griffith	53,440
Furniture, Caster for	J. C. Plumer	55,358
Furniture, Caster for	W. Johnson	55,665
Furniture, Caster for	F. G. Ford	58,999
Furniture, Caster for	J. A. Wiedersheim	58,523
Furniture, Caster for	H. Naylor	58,879
Furniture, Composition for, and for other purposes	J. J. Wiggin	60,309
Furniture, Floor attachment for	H. Cole	53,415
Furniture, Knobs of, Fastenings for	L. B. Myers	59,250
Furniture casters	J. T. Barnes	59,163
Furrowing corn ground, Machine for	W. H. Warwick	58,923
Furrowing device for corn planting	J. Plumb	52,598
Furrowing machine	J. I. Wilson	52,482
Furrowing machine	F. M. Birdsall	54,842
Fuzes, Electric	T. P. Shaffner	60,569
Fuze lock, Miners'	G. Hagenmeyer	58,639
Fuze, Percussion, for explosive shells	J. F. Shearman	54,027
G.		
Gaiter boots, Cutting	A. D. Drew	52,274
Gaiter shoes	A. M. Preble	53,483
Galley, Printers'	J. Snyder	51,877
Galloon trimmings for garments	E. Bredt	58,584
Galloon trimmings for under-garments	E. Bredt	58,583
Galvanic batteries, Connections for	H. Splitdorf	52,617
Game, Social	M. Bradley	53,561
Game of battle war chess	C. Richardson	60,247
Garments, Elastic straps for	J. W. Broughton	60,131
Garments, Fastenings for	W. G. Cook	55,064
Garments, Fastenings for	F. I. Palmer	53,472
Garments, Fastenings for	R. S. Pickett	53,331
Garments, Galloon trimmings for	E. Bredt	58,584
Garments, Under, Galloon trimmings for	E. Bredt	58,583
Garters	E. F. Burrows	56,524
Gas, air, &c., Carburetting	A. C. Messenger	55,778
Gas, Burning	J. C. McNulty	55,777
Gas, Burning, for the production of heat, light, &c.	S. Stevens	56,629
Gas, Carburetting	J. F. Boynton	58,209
Gas, Carburetting	W. M. Wright	56,503
Gas, Carburetting	P. Hogan	53,979
Gas, Carburetting	A. K. Johnston	57,729
Gas, Carburetting	T. D. Worrall	57,812
Gas, Collecting and separating carbonic acid from mixtures of	J. S. Baldwin	55,038
Gas, Generating	M. P. Coon	57,682
Gas, Generating	J. J. Ensley	57,491
Gas, Generating, Retorts for	J. H. Irwin	57,915
Gas, Generating, for illuminating purposes	S. N. Chamberlin	59,946
Gas, Generating, for motive power	D. E. Somes	57,787
Gas, Generating, to be used for motive power	D. E. Somes	53,695
Gas, Illuminating	T. Sabbaton	52,751
Gas, Illuminating	H. D. Green	57,123
Gas, Illuminating	H. D. Green	59,004
Gas, Illuminating	W. D. Seal	52,893
Gas, Illuminating, Generating	H. B. Myer	57,551
Gas, Illuminating, Generating and supplying	E. A. Pond and M. S. Richardson	55,359
Gas, Illuminating, Manufacture of	A. Millochan	58,553
Gas, Illuminating, and for other purposes, Treating	L. Stevens	56,116
Gas, Inhaling, Apparatus for	P. H. Vander Weyde	55,398
Gas, Inhaling, Apparatus for	T. F. Frank	59,000
Gas, Lighting	A. Barbarin	59,754
Gas, Lighting and extinguishing	H. S. Richardson	55,909
Gas, Lighting, by electricity	R. G. Pike	57,761
Gas, Lighting, by electricity	S. Gardiner, jr	55,641
Gas of liquids, Relieving	N. W. Wheeler	52,477
Gas, Manufacture of	J. H. Connelly	58,221
Gas, Medicated, Chemical compound for the manufacture of	A. H. Carpenter	59,179
Gas, Nitrous oxide, Preparing	C. H. Moseley	54,389
Gas, Purifying	W. C. Turnbull	58,002
Gas, Supplying, on steamboats and other vessels	N. Treadwell	58,321
Gas, Turning on and shutting off, by electricity	S. Gardiner, jr.	57,697
Gas apparatus	O. Tirrell	55,395
Gas apparatus	E. A.Pond and M. S. Richardson	53,482
Gas burners for heaters	E. Geisse	58,807
Gas cocks, Automatic	C. MacRae	56,240
Gas cocks, Turning, by electro-magnetism	S. Gardiner, jr	55,642
Gas fixtures, Attachment to	B. Jacobs	54,915
Gas fixtures, Socket couplings for	T. L. Reed	56,448
Gas heaters	C. Geisse	56,204
Gas heaters for cooking	J. S. Hull	56,052
Gas heating apparatus	D. G. Haskins	53,820
Gas inhalers	C. L. Munns	55,527
Gas jet cigar lighter	G. B. Snow and T. G. Lewis	52,457
Gas retorts	A. Millocham	60,537

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Gas retorts	E. Duffee	52,929
Gas machines and carburetters, Safety apparatus for	J. F. Boynton	58,055
Gas mains	I. N. Stanley	57,006
Gas pipes, &c., Cutting, Tool for	W. S. Howarth	52,715
Gas pipe joints	R. Wilson	59,702
Gas purifier	R. C. Bocking	55,994
Gas purifier, Screens for	E. Duffee	56,490
Gas purifiers, Dry screens for	E. Duffee	58,393
Gas regulator	J. S. Wood	57,425
Gas stand, Portable	B. Allen and J. Riddell	55,447
Gas stop-cocks, Electric	J. A. Heyl	58,943
Gas for inhalation, Generating, washing	A. W. Sprague	55,548
Gas from petroleum, Manufacture of	W. C. Wren and W. Barker	56,843
Gas from petroleum, naphtha, &c., Generating and burning	M. E. Hanson	57,502
Gas from petroleum and water, Producing and burning the	A. J. Griffin	56,143
Gas of mineral springs, Exhibiting the	J. P. Haskins	60,001
Gas in apparatus for diving, Regulating the flow of	B. Rouquayrol	59,529
Gas used in illuminating and heating, Liquids for carburetting and enriching.	J. F. Boynton	58,054
Gas from soap kettles, Rendering apparatus, &c., Preventing the escape of	W H. Pinner	59,260
Gasolier and cigar lighter, Combined	W. C. Lesster	59,617
Gates	W. I. Armstrong	57,432
Gates	I. J. Gray	59,743
Gates	B. S. Healy	57,713
Gates	E. Pettys and T. C. Leggett	60,551
Gates	S. F. Emerson	56,392
Gates	H. M. Ward	54,796
Gates	S. Puffer	57,967
Gates	G. W. Sigerfoos, J. J. Sands, and G. Fry.	57,782
Gates	V. Babcock	56,693
Gates	H. Maxell	55,322
Gates	R. R. Earnest	55,259
Gates	A. T. Boon	53,263
Gates	P. Freeman	55,481
Gates	C. Dixon and S. H. Close	56,019
Gates	R. J. Gilbert	60,171
Gates	S. S. Kappel	59,405
Gates	H. Adams	58,965
Gates	S. Spoor	60,435
Gates	A. Larrowe	59,416
Gates	O. C. McCarty	59,045
Gates	J. E. Fitts	59,378
Gates	E. Duncan	59,196
Gates	M. Packard	59,060
Gates	S. Spoor	59,930
Gates	J. F. Winchell	58,161
Gates	P. M. Ackerman	58,566
Gates	B. Clough	58,218
Gates	A. L. Grinnell	51,940
Gates	J. Martin	54,381
Gates	J. H. Graves	56,039
Gates	D. B. Baker	54,641
Gates	C. Purdy	54,596
Gates	C. P. Hawley and E. B. Murdock	56,412
Gates	J. P. Cadman	56,174
Gates, Automatic	J. S. Elkins and J. T. Green	55,633
Gates, Automatic	J. G. Page	56,987
Gates, Automatic	J. H. Schenck	55,914
Gates, Farm	J. Case	55,058
Gates, Farm	F. Gay	57,698
Gates, Farm	D. F. Luse	55,129
Gates, Farm	J. C. Murphy	53,856
Gates, Farm	L. Gibbs and H. M. Shaw	51,824
Gates, Farm	L. S. Deming	51,811
Gates, Farm	W. G. Hermance	52,713
Gates, Farm	W. Snyder	53,053
Gates, Farm	F. Müller	53,084
Gates, Farm	J. A. Cheatham	58,983
Gates, Farm	F. F. Terry	59,873
Gates, Farm	J. Lee	55,876
Gates, Farm	W. E. Elliott	55,476
Gates, Farm	D. McCurdy	57,537
Gates, Farm	A. Larrowe	60,527
Gates, Farm	H. D. Mead	57,946
Gates, Farm	R. W. McFarland	59,621
Gates, Farm	F. Gay	56,550
Gates, Farm	E. H. Peck	60,415
Gates, Farm	A. J. Smith and G. S. Hudson	52,759
Gates, Fastening for	P. Philippi	58,130
Gates, Fence	A. G. Barnard	54,487
Gates, Fence	J. S. Benedict	58,369
Gates, Fence	B. J. Wheelock	59,492
Gates, Fence	W. W. Bratt	60,331

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Gates, Fence	J. S. Benedict	53, 394
Gates, Fence	F. Raymond and A. Miller	55, 906
Gates, Flood	J. Maeby	56, 962
Gates, Flood, Self-operating	W. H. Allard and R. W. Thomas	57, 839
Gates, Grain	G. Scitzinger	57, 445
Gates, Self-operating	N. Comstock	52, 682
Gates, Sliding and swinging	W. Snyder	54, 032
Gates, Water	N. Jenkins	57, 329
Gate fastening	J. C. Kellogg	51, 838
Gate fastening	R. A. Leeds	58, 268
Gate hinges	H. Last	55, 505
Gate and gate-post	G. W. Balding	59, 753
Gate for forebays	J. J. Meeker and L. Cortright	55, 882
Gauge, Bilgewater	W. P. Kirkland	56, 763
Gauge, Grain	H. Haak	59, 213
Gauge, Paper, for printing presses	J. W. Thyng	56, 123
Gauge, Saw, Angular	E. Stanley and J. Goodrich	58, 498
Gauge, Sewing-machine, for tucking, felling, and binding	M. A. Duffy	59, 983
Gauge, Shingling	E. P. Newbanks	54, 586
Gauge, Steam	J. J. Ducomet	52, 006
Gauge, Steam	C. Bourgeois	52, 380
Gauge, Steam	E. Quinn	53, 183
Gauge, Steam	C. A. Wilson	53, 721
Gauge, Steam	R. C. Blake	56, 694
Gauge, Steam	C. A. Wilson	56, 135
Gauge, Steam	J. Lowe	56, 070
Gauge, Surface and depth	R. Hathaway	60, 186
Gauge, Water for steam generators	G. M. Githens	57, 118
Gauge cocks	P. Ball	53, 555
Gauge cocks	C. L. Frink	55, 640
Gauge cock, Boiler	W. T. Howard	58, 546
Gauge cock, Steam	J. Broughton	52, 521
Gauge cock, Steam	J. C. Schaefer	52, 452
Gauge cock, Steam	F. Henke	54, 722
Gauge cock for steam boilers	J. Holdcraft	53, 079
Gauge cocks for steam generators	M. M. Robinson	53, 344
Gauge float	L. L. Lee	57, 929
Gauge for augers	S. L. Lyford	55, 132
Gauge for boilers	C. L. Frink	55, 638
Gauge for determining angles	E. C. C. Kellogg	59, 721
Gauge for screw cutting tools	E. Lyman	57, 934
Gauging rod	W. J. Tait	54, 229
Gear cutter	E. Parker	56, 149
Gear cutter	L. F. Grant	56, 495
Gearing	S. W. and J. F. Palmer	54, 589
Gearing, Friction, Belted	J. D. Whelpley	53, 717
Gearing, Intermittent and expansive	L. B. Potter	59, 064
Gearing for threshing machines	L. B. Hubbell	52, 048
Gearing for grinding and other rollers	W. E. Sibley	53, 236
Gearing for latches, &c	W. Fitzgerald	54, 519
Generating apparatus, Steam	S. A. Smith	57, 643
Generators	T. Main	59, 424
Generators, Gas	J. McWilliams	55, 328
Generators, Gas, Compressed	J. Gros	53, 758
Generators, Steam	M. Foreman	58, 802
Generators, Steam	H. S. Saroni	57, 575
Generators, Steam	R. Bailey	60, 611
Generators, Steam	W. Branagan	59, 952
Generators, Steam	H. Feyh	60, 496
Generators, Steam	H. C. Sergeant	53, 493
Generators, Steam	E. Reynolds	59, 780
Generators, Steam	F. Baumann	59, 947
Generators, Steam	D. G. Haskins	56, 748
Generators, Steam	E. P. Chase	58, 164
Generators, Steam	J. A. Campbell	55, 237
Generators, Steam	T. Mitchell	59, 051
Generators, Steam	C. Kinkel	57, 637
Generators, Steam	A. J. Smith	55, 172
Generators, Steam	L. H. Colborn	59, 361
Generators, Steam	P. Hoelzel	59, 020
Generators, Steam	S. Sherman	58, 685
Generators, Steam	A. H. Tait and J. W. Avis	58, 506
Generators, Steam	R. W. Thompson	58, 564
Generators, Steam	J. Firmenich	53, 284
Generators, Steam	J. M. Hicks	53, 300
Generators, Steam	J. McMurtry	58, 275
Generators, Steam	G. B. Brayton	53, 399
Generators, Steam	W. Conant	58, 604
Generators, Steam	E. Rowing	58, 678
Generators, Steam	J. Woodford and W. H. Bancroft	59, 146
Generators, Steam	C. S. Bell	58, 017
Generators, Steam	D. B. Tanger	60, 279
Generators, Steam	G. E. Noyes	59, 442

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Generators, Steam	T. Mitchell	56, 778
Generators, Steam	C. H. Ford	52, 243
Generators, Steam	J. Badger	51, 788
Generators, Steam	R. Rafael	54, 205
Generators, Steam	H. S. Saroni	60, 562
Generators, Steam	W. Zellner	54, 654
Generators, Steam	R. W. and D. Davis	54, 063
Generators, Steam	N. W. Wheeler	55, 405
Generators, Steam	R. E. Rogers and J. Black	55, 539
Generators, Steam	M. M. Rounds	55, 785
Generators, Steam	S. P. Ruggles	54, 780
Generators, Steam	D. C. Howell	54, 730
Generators, Steam	P. C. Moller	53, 761
Generators, Steam	B. Holly	53, 617
Generators, Steam	W. C. Baker	60, 459
Generators, Steam	W. L. and T. Winans	58, 038
Generators, Steam	J. Howard and E. F. Bonsfield	59, 147
Generators, Steam	W. Phelan	56, 796
Generators, Steam, Automatic	C. H. Ford	52, 115
Generators, Steam, Automatic feed apparatus for	J. B. Collen	52, 111
Generators, Steam, Feed apparatus for	C. H. Ford	52, 113
Generators, Steam, Feed-water heaters for	H. S. Saroni	57, 576
Generators, Steam, Fire boxes for	C. F. Jauriet	52, 945
Generators, Steam, Gauge cocks for	M. M. Robinson	53, 344
Generators, Steam, Indicators for	J. H. Springer and W. M. Bartram	55, 732
Generators, Steam, Inserting fusible plugs in	J. French	58, 092
Generators, Steam, Low-water detectors for	T. Savill	58, 179
Generators, Steam, Try cocks for	J. Regester	53, 337
Generators, Steam, Water gauges for	G. M. Githens	57, 118
Generators, Steam, Water indicators for	G. Lutz	55, 130
Generators, Steam, Water indicators for	F. Chalfant	55, 819
Generators, Steam, Water and steam separator for	B. C. Bristol	60, 470
Generators, Steam, for heating purposes	I. E. Craig	53, 118
Generator furnace, Steam jets for	D. M. Nichols	59, 055
Gibs for cross-heads	W. R. Bishop	55, 992
Gigtree	E. A. Cooper	53, 578
Gildings, Preparing oval frames for	L. Reinauer	53, 338
Gilding and ornamenting surfaces, Process for	M. W. Brown	52, 673
Gins, Cotton	F. T. Ackland, H. G. Mitchell, and M. Mustapha.	58, 187
Gins, Cotton	E. Town	54, 625
Gins, Cotton	J. Watrous, jr	53, 910
Gins, Cotton	S. R. Parkhurst	51, 962
Gins, Cotton	F. M. McMeekin	60, 402
Gins, Cotton	J. E. Carver	51, 892
Gins, Cotton	C. L. Fleischmann	52, 037
Gins, Cotton	H. V. Scattergood	55, 542
Gins, Cotton	E. A. Cowper	53, 753
Gins, Cotton	C. Spofford and C. H. Hersey	55, 787
Glass, Manufacture of	R. Washburn	52, 917
Glass, Manufacture of	H. M. Baker	60, 119
Glass, Manufacture of	S. Richards	55, 159
Glass, Ornamenting and lettering	T. R. Hartell	58, 410
Glass, porcelain, &c., Printing on	E. C. Jayne	52, 418
Glass, Toilet, Adjustable	G. Chappel	52, 531
Globe	E. Bascom	58, 757
Globe cocks	J. Worcester	55, 756
Glue, Liquid	W. C. Watson	59, 326
Glue, Liquid	C. F. Binder	56, 665
Gluing and cementing machine	M. H. Merriam and E. L. Norton	55, 335
Gold, &c., Amalgamating	F. N. DuBois	53, 590
Gluing press	M. H. Merriam and E. L. Norton	55, 334
Gold, Amalgamating with mercury	M. Foreman and J. R. Mathewson	58, 088
Gold, Preparing, for dentists	E. Lamm	56, 765
Gold and silver, Amalgamating	G. B. Simpson	52, 456
Gold, silver, and copper, Parting	G. A. Scherpf	52, 325
Gold, silver, and copper ores, Disintegrating and desulphurizing.	F. F. Brower and G. C. Campbell	52, 132
Gold, silver, and copper ores, Reducing refractory	C. W. Harvey	53, 444
Gold and silver ores, Desulphurizing	A. L. Fleury	56, 027
Gold and silver from ores, Extracting	C. T. Carpenter	53, 569
Gold and silver from ores, Separating	W. Crookes	54, 829
Gold and silver from ores, Separating	E. Brown	59, 955
Gold and silver from ores, Separating	J. H. Elward and J. L. Hayes	52, 834
Gold and silver with lead, Amalgamating	H. L. Fulton	52, 273
Gold and silver from quartz, &c., Extracting	W. M. Fuller	51, 822
Gold and silver washing apparatus	J. Hendy	52, 850
Gold-beating apparatus	T. C. Robbins	57, 380
Gold separator	C. F. Testman	56, 636
Gold ores, Treating	H. Halvorson	52, 490
Gold size, Composition for	C. Bartholomas	54, 488
Goniometers	W. W. Cooper	56, 013
Governors	E. H. Knight	59, 412
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Governors	E. H. Knight	59, 413
Governors	J. Degnon	56, 908
Governors, Atmospheric	B. Mackerly	55, 134
Governors, Engine	A. A. Henderson	60, 629
Governors, Engine	W. J. Hallefas	54, 336
Governors, Engine, Steam	F. Taggart	60, 084
Governors, Engine, Steam	A. P. and B. F. Lanterman	52, 298
Governors, Engine, Steam	T. Silver	58, 491
Governors, Engine, Steam	R. K. Huntoon	60, 192
Governors, Engine, Steam	T. S. La France	56, 956
Governors, Engine, Steam	W. Nichols	57, 953
Governors, Engine, Steam	R. Eickemeyer	57, 490
Governors, Engine, Steam	E. C. Edmonds	58, 996
Governors, Engine, Steam	A. Lawrence	52, 789
Governors, Engine, Steam	J. C. Cline	54, 057
Governors, Engine, Steam	D. Shive	54, 423
Governors, Hydraulic	S. M. Hunter	60, 632
Governors, Hydraulic	J. E. Gillespie	57, 630
Governors, Vibrating	E. Towne	59, 877
Governors for horse powers	T. B. McConnaughey	57, 941
Grab tool for oil wells	J. H. Luther	56, 961
Grab for hedge plant	H. Ferris	53, 963
Grab for oil and other wells	D. F. Mellen	52, 437
Grading instruments	S. L. Donnell	60, 346
Grain, Cleaning	R. Redfield	52, 882
Grain, Cleaning	B. Barney	58, 048
Grain, &c., Cleaning	E. Sweetland	53, 502
Grain, Conveying	S. W. Wood	60, 313
Grain, Distilling	J. W. Beebe and T. F. Lloyd	60, 327
Grain, &c., Drying and cleansing	A. Tonnar	56, 868
Grain, flour, &c., Preserving	J. Carlins	58, 374
Grain, Measuring, Tally boxes for	A. J. Burke	58, 593
Grain, Ventilating	J. Shone	54, 969
Grain, Weighing	R. S. Morison	55, 691
Grain, Weighing and measuring	D. D. Armes	53, 553
Grain, Wheat and other, Cleansing and hulling	E. P. Barrabe	60, 460
Grain, Wheat and other, Sowing, Machine for	C. C. Carter	57, 862
Grain binders	S. D. Locke	57, 739
Grain binders	S. D. Locke	60, 208
Grain binders	S. D. Locke	56, 580
Grain binders	S. T. Holly	57, 904
Grain binders	H. Harrier	57, 710
Grain binders	S. T. Holly	57, 138
Grain binders	W. F. Goodwin	53, 138
Grain binders	I. Lancaster	54, 177
Grain binders	I. Lancaster	52, 175
Grain binders, Reels for	S. D. Locke	52, 722
Grain cleaner	C. F. Baylor	56, 880
Grain cleaner	G. Stevenson and J. J. Crider	55, 174
Grain cleaner and separator	B. T. Trimmer	55, 179
Grain coolers	G. D. Woodworth	56, 136
Grain drill tubes	S. K. Lighter and T. Harding	59, 422
Grain dryer	G. Clark	56, 708
Grain dryer	S. Godfrey	53, 293
Grain dryer	J. R. Evertson	59, 989
Grain dryer	G. Clark	53, 575
Grain dryer	R. Heneage	58, 254
Grain dryer	R. T. Sutton	51, 880
Grain dryer	J. Norton, 3d	56, 255
Grain dryer	H. H. Beach	56, 348
Grain drying kiln	N. Wallister	59, 102
Grain elevator	J. T. Parlour	54, 822
Grain feeder, Revolving	M. Decamp	54, 126
Grain gauges	H. Haak	59, 213
Grain hullers	W. C. Grimes	52, 706
Grain hullers	R. W. Van Peyma	52, 774
Grain hulling machine	F. Henckel and W. Seck	59, 838
Grain hulling machine	J. A. Welsh	57, 605
Grain meters	W. S. Sampson	54, 072
Grain mower	W. Moses	52, 309
Grain screens	H. Ogborn	55, 152
Grain separators	S. Heflebower and J. M. Reed	60, 513
Grain separators	P. Griswold	54, 895
Grain separators	J. S. Bodge	58, 052
Grain separators	S. M. Wirts and F. Swift	58, 707
Grain separators	J. W. Free	52, 841
Grain separators	E. C. Patterson	52, 071
Grain separators	J. Green	55, 952
Grain separators	J. H. Chase and J. M. Tiffany	56, 177
Grain separators	A. J. and H. Lineberger	56, 237
Grain separators	T. J. Price	54, 403
Grain separators	J. Woolever	56, 316
Grain separators	J. H. Fairchild	53, 735
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Grain spout	A. D. Foote	54, 322
Grain tallying machine	A. Harter	59, 217
Grain and hay protector	A. J. Frisbie	58, 401
Grain from vessels, Discharging	C. H. Merry	59, 047
Granaries, fruit-houses, &c	S. R. Beckwith	53, 101
Granite, Cutting	J. W. Maloy	58, 853
Granulating furnace slag, mode of	C. E. Morris and J. Eymon	56, 595
Grape trellis	D. F. Rickey	52, 205
Grape trellis	B. F. Elliott	56, 541
Grape vines, Training	G. S. Salsbury	57, 777
Grape vines, Trellis for	B. F. Elliott	60, 623
Grape vine protectors	J. S. Davis	54, 302
Grape vine protectors	J. Walter	60, 099
Grappling irons	J. H. Chapman	57, 476
Grappling tool	N. W. Green	60, 361
Grass, China, Extracting fibre from	J. Steart	59, 331
Grate	G. L. Smith	57 396
Grate	C. Hires	54, 725
Grate, Coal, Open	C. Crawford	55, 065
Grate, Fire, Locomotive	R. Eaton	59, 329
Grates, Fire, and andirons, Portable	J. H. Coate	59, 968
Grates, Furnace	C. Whittier	52, 236
Grates, Water	W. A. L. Kirk	59, 130
Grate bar	S. Harrison	58, 252
Grate bar	L. B. Tupper	57, 411
Grate bar	H. K. Bates	55, 603
Grate bar	C. W. Pierce	58, 474
Grate bar	G. H. Clarke and C. Van Wagener	59, 311
Grate bar	L. B. Tupper	52, 913
Grate bar	S. Smith	58, 494
Grate bar	R. Montgomery	57, 358
Grate bar	H. B. Schofield	54, 415
Grate bar	A. C. Fletcher	53, 966
Grate bar	D. Houston	54, 349
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Grate bar	Geo. O. Tupper	53, 963
Grate bar for furnace	G. S. Nevins	52, 189
Grate bar for furnaces, Hollow	W. B. Treadwell	53, 059
Grate and grate bars	R. W. and D. Davis	54, 064
Grates for furnaces	G. Nimmo	59, 057
Grates for heating stoves	A. Brown	60, 334
Grates for stoves	E. Draper	52, 548
Grates for stoves, Revolving	J. Riddell and B. Allen	59 266
Grater, Nutmeg	C. L. Gilpatric	58, 632
Grater, Nutmeg	S. C. Moore	54, 388
Grater, Nutmeg, cake cutter, and egg beater	F. Bucknam	54, 679
Grater, sifter, scoop, and holder combined	S. A. McGill	53, 021
Grater, Vegetable	E. Stimson	57, 213
Grater for carrots and other vegetables	W. A. Bemis	55, 807
Grater and egg beater	F. R. Stockton	52, 767
Graver	J. Mull	53, 744
Griddle-cake baker	S. Stuckey	58, 912
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Grinding cutlery, &c	C. T. Frost	53, 598
Grinding cylinders of paper engines	T. Handy	60, 181
Grinding metal plates	N. B. Reynolds	57, 571
Grinding tools, &c	F. G. Belknap	52, 015
Grinding and amalgamating machine, Dies and shoes for	S. Cary	56, 105
Grinding and boring apparatus	J. Richardson	53, 747
Grinding and holding edge tools, Machine for	N. A. Buhle	56, 896
Grinding and polishing, composition for	W. H. Strahan	58, 504
Grindstones, Tool-rest for	T. W. Brown	58, 768
Grindstone journal box	E. White and J. H. Warren	54, 048
Gripe band	P. McQuaid	56, 970
Ground, Marking, for planting	B. J. McAfee and J. H. Wirt	57, 939
Ground drag	C. Ball and J. W. Haughtelin	57, 067
Grubbing machine	O. A. Cheney	52, 967
Grubbing machine	W. W. St. John	57, 593
Grubbing machine	A. McKenny	54, 000
Grub and stump machine	A. Hill	57, 715
Guards for railway crossing	M. Bray	55, 001
Guide for boom jaws	I. M. Rose	52, 749
Guides for folding and uniting the edges of two pieces of cloth	H. B. Esty	57, 304
Gum, Spruce, Purifying	H. Gortner	58, 095
Gum from cane juice, Separating	J. F. C. Carle	52, 938
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Gun, Spring, Toy	E. Allen	55, 596
Gun barrels, Heating and soldering	J. Ericsson	52. 150
Gun carriage, Operating	T. P. Shaffner	60, 571
Gun cotton	F. A. Abel	59, 888
Gun cotton	E. C. Kirk	53, 306
Gun locks	W. Rudolph and A. Braun	54, 021
Gun locks	J. C. McBeth	58, 443
Gun locks, Safety	W. G. Oliver	55, 588
Gun locks, Safety stop for	L. H. G. Ehrhardt	55, 795
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Gunstocks and barrel attachment	D. C. Thresher	54, 624
Gun swab	P. M. Hendrick and J. J. Chattaway.	56, 559
Gutta-percha, India-rubber, &c., Manufacture of	E. L. Simpson	58, 902
Gutta-percha and India-rubber compound, Colored	J. Malcolm	51, 846
Gutta-percha and India-rubber compound, Manufacture	J. Malcolm	51, 848
Gutta-percha and India-rubber compound, Vulcanized	J. Malcolm	51, 849
Gutta-percha or hard rubber for articles of dress, Treating	W. H. Halsey and M. Fitzgibbons	53, 922
Gutters, Iron	E. Whitehead	59, 804
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Hair, Crimping	H. Christian	53, 413
Hair, Human, Imitation of bra'ded	S. E. Cook	54, 116
Hair, Ladies', Instrument for parting	J. L. Meek	53, 163
Hair crimpers	B. Mannon	57, 441
Hair restorative	J. Sprink	58, 690
Halter	C. H. Sawyer	59, 277
Hames	T. X. Kaffer	53, 930
Hames, tug, and buckle	L. W. Heeland	57, 899
Hames fastener	M. R. Sholters	56, 621
Hames fastener	W. J. Alexander	60, 319
Hames fastening	M. R. Sholters and T. Catern	60, 574
Hames tug	J. McInnes	57, 944
Hames tug and breast collar	A. McMullen	60, 031
Hames for horse collars	J. E. Brown	53, 916
Hammers, Power	T. Shaw	52, 894
Hammers	D. T. Crockett	60, 482
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Hammers, Bush	A. Wheeler	59, 491
Hammers, Drop	J. Aughe	55, 976
Hammers, Nail	W. G. Ward	56, 838
Hammers, Nail	C. G. Dodge, jr	56, 191
Hammers, Steam	E. L. Kinsley	54, 560
Hammers, Steam, Valve gear for	H. Hamilton	53, 442
Hammers, Steam, Valve gear for	J. Watt	52, 232
Hammer, stove hook, &c., Combined	T. C. Law	56, 423
Hammer, Tack	A. Pond	55, 704
Hammer, Tack, nut-cracker, tack-puller, and bootjack, Combined.	G. R. Osborn and J. Crandell	54, 008
Hammer and carpet stretcher	F. M. Osborn	55, 154
Hammer and screw wrench	L. S. and E. G. Hoyt	55, 107
Hammers and stamps, Operating	C. R. James	55, 772
Hammers for bending couplings	J. T. Bruen	55, 813
Hammers for forging blooms	G. B. Manley	59, 425
Hammers or burr for facing millstones	L. Sauers	54, 258
Hands, Artificial	J. F. Maguire	56, 427
Handcuffs, Adjustable	O. C. Phelps	56, 463
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Handle, Metallic, for cutlery	L. S. White	53, 546
Handle, Tool	C. W. Bioren	59, 757
Handles to boilers and other vessels, Attaching	J. H. Brown	60, 337
Handle for brushes	A. Alden	57, 656
Handle for coal shovel	J. Pfeifer	57, 759
Handle for coffee, spice, and other small mills	J. Kinzer	54, 740
Handle for cutlery	T. D. Lakin	57, 521
Handle to hoes, rakes, &c., Attaching	A. Boyden	55, 000
Handle for milk cans, &c	C. Millar	53, 649
Handle to plated ware, Fastening	H. G. Smith and E. Pomeroy	54, 620
Handle to tools, Attaching	G. W. Harris and A. Franz	55, 096
Hanger for shafting	J. E. Atwood	54, 275
Hanger for stove hooks, &c	J. Sigourney, A. T. Robinson, and J. Shepard.	60, 581
Harmonium	C. F. Uhlig	57, 270
Harmoniums, organs, &c	W. Dawes	52, 940
Harness	A. D. Kendig	59, 316
Harness	W. Peabody	56, 462
Harness	R. Huyck	57, 143
Harness, Line for, Safety	A. H. Rockwell	60, 253
Harness snap	G. W. Devin	54, 700
Harness reins	W. Clark	59, 819
Harness and saddle	A. Angelini	53, 932
Harness for horses	H. C. Smith	56, 283
Harness saddle seats	O. B. North	55. 348
Harpoons, Rocket	T. W. Roys and G. A. Lilliendahl	54, 211
Harrows	N. A. Davis	53, 792
Harrows	M. D. Wells	52, 233
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Harrows	W. S. O'Brien	55, 351
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Harrow and marker, Combined	A. Pierce	57, 961
Harrow and roller, Combined	G. H. Woodruff	60, 655
Harrow and roller, Combined	J. Davis	58, 613
Harrow and roller, Combined	J. Steiner and J. P. Miller	54, 790
Harrow and seeder, Combined	A. Fairchild	59, 827
Harrows, Carriage	T. J. Marinus and J. and W. Whait	58, 854
Harrow and seeding roller, Combined	W. W. Wiley	53, 072
Harrow and sulky plough	J. E. Cheasebro	58, 773
Harvesters	W. Zimmerman	55, 758
Harvesters	J. Diek, jr	58, 617
Harvesters	C. Denton	58, 720
Harvesters	J. M. Canfield, A. F. Still, and E. P. Wheeler.	53, 409
Harvesters	A. Palmer	54, 396
Harvesters	E. M. Krum	54, 372
Harvesters	M. Easterbrook, jr	54, 876
Harvesters	B. G. Fitzhugh	54, 466
Harvesters	J. Seibel	54, 784
Harvesters	J. G. Perry	54, 946
Harvesters	J. F. Seiberling	57, 583
Harvesters	W. Needham	57, 552
Harvesters	J. F. Seiberling	54, 611
Harvesters	W. N. Whitely	59, 302
Harvesters	F. C. Coppage	55, 763
Harvesters	O. H. Burdiek	52, 927
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Harvesters	C. C. Holman	52, 168
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Harvesters	J. H. Whitenack	53, 069
Harvesters	A. Lowmiller	52, 724
Harvesters	A. S. Acker	52, 809
Harvesters	D. D. Gitt	52, 843
Harvesters	W. H. Burkhart	52, 526
Harvesters	C. Tompkins	53, 057
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Harvesters	J. Fox and S. C. Ridgaway	53, 969
Harvesters	W. F. Goodwin	53, 137
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Harvesters	O. Redmond	53, 872
Harvesters	D. M. Osborne	55, 781
Harvesters	D. R. Piaste	55, 427
Harvesters	J. A. Dodge	55, 837
Harvesters	D. G. Norris	55, 780
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Harvesters	W. N. Whitely, jr	59, 303
Harvesters	E. Kramer	54, 370
Harvesters, Clover	R. B. Linthicum	57, 345
Harvesters, Corn	T. Yates	60, 318
Harvesters, Corn	A. Dyson and W. N. Macqueen	55, 840
Harvesters, Corn	C. M. Lightner	56, 236
Harvesters, Corn	T. Boyd	52, 819
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Harvesters, Corn	W. E. Prall	54, 951
Harvesters, Corn	J. M. Wallis and E. Miller	53, 710
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Harvesters, Corn	D. J. Tittle	58, 320
Harvesters, Corn	G. Manlove and J. P. Green	58, 348
Harvesters, Corn	C. G. Moremen	57, 360
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Harvesters, Droppers for	R. Dutton	55, 074
Harvesters, Finger bars of	R. Dutton	54, 702
Harvesters, Guard finger of	A. B. Reynolds	57, 655
Harvesters, Knife sections for, Tempering	J. W. Doty	59, 192
Harvesters, Pitman for	H. Bishop	53, 261
Harvesters, Pitman couplings for	S. H. Wilson	55, 435
Harvesters, Pitman heads for	J. J. Hill	54, 724
Harvesters, Potato	J. Barta	54, 672
Harvesters, Raking and loading, Attachment to	W. Cogswell	54, 689
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Harvesters, Sickle heads for	M. H. Hilburn	56, 749
Harvesters, Sickles of, Sharpening	J. Jann	59, 770
Harvester crank-motion	A. Palmer	54, 397
Harvester cutter	S. Gillam	55, 084
Harvester cutters	J. M. Wehrly	57, 023
Harvester cutter sharpener	J. McKnight	56, 589
Harvester machine	E. T. Ford	52, 700
Harvester pitman	B. J. Hunter	57, 140
Harvesting	R. Dutton	56, 389
Harvesting beams, Machine for	D. C. Rosier	58, 140
Harvesting, husking, and shelling corn	D. A. Dickinson	58, 785
Harvesting machine	N. A. Dederer	52, 395
Harvesting machine	T. Welch	53, 713
Harvesting machine	W. H. Burkhart	52, 264
Harvesting machines, Pitman head and crank-wrist box for	W. N. Whitely, jr	56, 304
Hats	W. F. Warburton	57, 019
Hats	W. H. White	58, 328
Hats	W. S. Nelson	57, 554
Hats	C. L. Rahmer	56. 447
Hats	W. H. White	58, 329
Hats, Blocking and shaping	G. Osterheld and R. Eickemeyer	53. 661
Hats, Ironing	W. Best and M. S. Drake	53. 518
Hats, Ironing	W. Best	53, 401
Hats, Making	W. E. Doubleday	58, 391
Hats, Pouncing	E. Nougaret	58, 126
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Hats, Pouncing	E. Nougaret	52, 739
Hats, Pressing	M. Morse	53, 083
Hats, Pressing	G. L. Thompson	60, 088
Hats, Sweat-linings into, Sewing	R. Eickemeyer	58, 622
Hats, Ventilators for	B. J. Burnett	53, 406
Hat blocks	H. A. Robinson	54, 601
Hat-blocking machine	S. Boyden	59, 707
Hat bodies, Dyeing	A. C. Brush and G. C. White	52, 591
Hat bodies, Felting	C. Faure	52, 489
Hat bodies, Felting	P. W. Somers	60, 274
Hat bodies, Felting	J. W. Blackham	59, 758
Hat bodies, Felting or sizing, Roll for	P. W. Somers	60, 275
Hat bodies, Moulding, felting, and pulling	M. A. Johnson and W. Murkland	59, 031
Hat brims, Springs for	S. Peck	60, 236
Hat brims, Springs for	G. Mallory	60, 213
Hat-forming machine	H. N. Swift	53, 196
Hat-ironing machine	M. S. Drake	57, 437
Hat-pressing machine	M. Morse	57, 638
Hat-pressing machine	I. T. Green	58, 544
Hat-pressing machine	N. B. Hooper	53, 826
Hat protector	H. Hodgson	59, 019
Hat protectors	G. W. Bidwell	57, 074
Hats and bonnets, Fabric for	E. Copleston	59, 822
Hats and caps	W. H. White	54, 986
Hats and caps	W. H. White	54, 049
Hay, Baling	R. Wakeman and J. L. Ballance	56, 294
Hay, Elevating, Horse power apparatus for	F. Wicks	57, 608
Hay, Raking and loading	J. P. Smith	56, 331
Hay Raking and loading	R. and I. Wright	59, 116
Hay, Raking and loading	H. Willard	57, 421
Hay, Raking and loading	H. S. Palmer	58, 282
Hay, Raking and loading	M and D. Cole	58, 601
Hay, Raking and loading	W. D. Mayfield	53, 464
Hay, Raking and loading	W. A. Duncan	54, 133
Hay, Raking and loading	T. Frame	59, 205
Hay, Raking and loading	A. W. Heany	55, 098
Hay, Raking and loading	J. S. Preston	52, 691
Hay, Raking and loading	F. Nevergold and G. Stackhouse	54, 392
Hay, Raking and loading	W. W. Barnes	52, 814
Hay, Raking and loading	M. Webb	59, 105
Hay elevator and conveyor	N. D. Hinman	59, 108
Hay loaders	O. T. Nanny	53, 470
Hay loaders	S. R. Higgins	54, 723
Hay loaders	A. Fuller	56, 924
Hay loaders	F. Van Etten	54, 627
Hay loaders	C. Gibbs	55, 083
Hay loaders	De Witt C. Jewett and A. C. Bowen	51, 947
Hay loaders	W. H. Elliot	56, 023
Hay loaders	G. Race	54, 084
Hay rakers and loaders	H. Baker	55, 979
Hay rakers and loaders	J. W. Foust	58, 804
Hay spreaders	L. L. Knight	53, 739
Hay spreaders	C. R. Frink	54, 524
Hay spreaders	C. R. Frink	59, 001
Hay stackers	C. Rundell	56, 273
Hay stacking device	W. Louden	57, 525

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Hay and grain protector	A. J. Frisbie	58,401
Hay and straw stacker	C. Rundell	54,213
Head block for holding boots and shoes	I. E. Allen	52,657
Head blocks for saw-mills	D. C. Baughman	53,393
Head-dresses for ladies	H. S. C. Iverson	57,328
Head-rest, Portable	J. M. Whitney	51,987
Head-rest for railway cars	P. A. La France and J. D. Dunsmore	57,926
Hearses	M. Jencks and F. Altmeyer	58,535
Heat, Raising by combustion of fuel of various kinds	J. F. Bennett	53,104
Heat and light, Explosive liquids for the production of	W. Beschke	57,245
Heat radiators	J. B. Hyzer	54,912
Heat radiators	J. Conver and J. Borthwick	57,481
Heat radiators for stove-pipes	E. Detwiler	60,490
Heat radiator, or stove-pipe drum	F. A Balch	56,514
Heat radiating attachment to stove-pipes	N. E. Cornwall	59,971
Heat regulators for hot air furnaces	A. H. Tingley	59,294
Heaters, Feed water	G. Hasecoster and L. Stephens	58,099
Heaters, Feed water	J. Nicholson	54,940
Heaters, Feed water, for steam generators	H. Saroni	57,576
Heaters, Gas	C. Geisse	56,204
Heaters, Gas, for cooking	J. S. Hull	56,052
Heater, Gas, or coal oil stoves	C. A. Harper	59,766
Heaters, Gas burners for	C. Geisse	58,807
Heaters, Generators, steam	T. E. Belton	60,124
Heater, Portable	A. T. Hutson	59,397
Heater, Sad-iron	P. Flinn	57,055
Heaters, Sad-iron	C. H. Frost	58,609
Heaters, Sad-iron	E. N. Jenkins	58,424
Heaters, Sad-iron	J. S. Dennis	60,150
Heaters, Sad-iron	W. P. Wage	58,324
Heaters, Smoke-consuming	G. W. Fair	54,705
Heaters, Vulcanizing, Dental	D. J. Peer	53,666
Heaters for chimneys	T. M. Aspinall and S. H. Whitlock	53,770
Heater for soldering irons	R. Brady	59,815
Heater for washing machines	W. H. Pratt	59,068
Heating apparatus	S. Smith	56,816
Heating apparatus, Gas	D. G. Haskins	53,820
Heating apparatus, Hydrocarbon	O. F. Morrill	60,224
Heating apparatus, Steam	J. Elder, jr.	59,198
Heating and agitating substance	G. Nebeker	55,886
Heating and cooking apparatus, Petroleum	J. S. Hull	58,260
Heating and cooling air, &c	L. Perkins	56,338
Hedge-cutting machine	D. Oliver	63,033
Hedge plant, Grab for	H. Ferris	53,963
Hedge trimmers	W. and H. Sperry	57,590
Heel, Boot	C. Robinson and J. C. Marshall	56,992
Heel breasting machine	C. A. Helms	52,997
Heel calk	J. F. Richardson and G. F. Morse	52,077
Heel irons	W. M. Rice	58,675
Heel-polishing machine	S. D. Tripp	52,470
Heel-polishing machine	J. M. Thompson and S. D. Tripp	52,499
Heel-polishing machine	J. M. Thompson and S. D. Tripp	52,498
Heliotropes, Automatic	L. F. Morawetz and C. Volkmar	55,523
Helices, Insulating wires of	J. J. Clark and H. Splitdorf	58,217
Hemmers, Sewing machine	G. C. Overhiser	52,646
Hemp, flax, &c., Curing	W. D. Monk	59,436
Hemp, flax, and straw, Treating	T. Gray	60,177
Hemp break	G. M. Campbell	52,821
Hemp and cotton stalks, Pulling	A. W. Goddard	60,359
Hemp or flax, or flax waste, Enveloping	J. Leinweber	54,375
Hens' nest	C. Campbell	52,675
Hens' nest	H. Stevens	54,974
Hides, Dry, Softening	J. M. Muller	59,627
Hides, Drying	M. H. Merriam and E. L. Norton	55,333
Hides, Green, Treating	L. Mackay	54,568
Hides, Handling	J. Snell, jr.	59,469
Hides, Preparing and tanning	B. F. Taber	52,464
Hides, Scraping	H. Lampert	60,636
Hides, skins, furs, &c., Preparing	J. A. Roth	55,715
Hides, Working	A. Adler	56,687
Hides and skins, Curing	H Napier	59,251
Hides and skins, Fleshing and stoning	J. S. Wheat	59,692
Hides and skins, Tanning	B. Picard	52,655
Hinges	J. W. Allen	53,389
Hinges	W. T. Wells	59,107
Hinges	S. Selden	52,649
Hinges	J. R. Lomas	53,637
Hinges	D. C. Jordon	54,171
Hinges	J. C. Hyde	55,954
Hinges, Butt	G. W. Beers	55,987
Hinges, Carriage	W. Field and R. Carruthers	59,202
Hinges, Gate	B. Greenside	59,211
Hinges, Gate	L. E. Woodard	58,930
Hinges, Making	J. B. Evrard and J. P. Boyer	55,794

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Hinges, Shutter	J. Slusser	54, 618
Hinges, Shutter	O. S. Garretson	55, 644
Hinges, Shutter	R. Covington	59, 365
Hinges, Trunk	W. Wakenshaw and T. R. Dunham	53, 908
Hinge, Trunk, and brace	J. J. Cowell	56, 720
Hinges for moulders' flasks	E. C. Little	58, 948
Hinges for window shutters	W. H. Foulds	59, 581
Hinging covers to stoves, tea kettles, &c., Attaching	D. G. Littlefield	53, 250
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Hoes	J. C. Plumer	53, 332
Hoes	A. C. Kasson	60, 195
Hoes	S. W. Adams	52, 510
Hoes	S. Rogers	52, 079
Hoes	E. Ritson and W. W. Brigg	55, 365
Hoes	J. Gleason	57, 119
Hoes	S. W. Adams	58, 966
Hoes, Garden	D. E. Eaton	51, 893
Hoes, Horse	J. Gifford, jr	59, 584
Hoes, Horse	T. P. Fish	54, 315
Hoes, Manufacture of	R. Harper	59, 744
Hoes, rakes, &c., Handles to, Attaching	A. Boyden	55, 000
Hoes, Shuffle	J. D. Jenkins	54, 916
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Hoes, Weeding	W. J. Wells	57, 802
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Hook, Check	C. A. Ball	53, 726
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Hook, Hat, and cigar-holder	C. Gschwind and J. Grether	57, 126
Hook, Ladder	J. G. Rockwell	58, 734
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Hook, Sap-bucket	J. Bullock	55, 611
Hook, Shade	S. White	54, 985
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Hook, Snap	E. A. Andrews	55, 219
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Hook, Snap	H. Bradbury	56, 666
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Hook, Snap	C. H. Alsop	57, 456
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Hook, Snap	E. B. Forbush and J. Letchworth	59, 506
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Hook, Stove, hammer, &c., Combined	T. C. Law	56, 423
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Hooks, Fish	C. O. Crosby	59, 893
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Hooks, Harness	J. I. Wilkins	55, 942
Hooks, Pruning	W. S. McLean	51, 899
Hooks, Pruning	M. Gates	55, 483
Hooks, Snap	O. S. Judd	56, 951
Hooks, Snap	A. McManus	58, 550
Hooks and eyes	J. B. Martindale	60, 026
Hooks and eyes	I. Weinberg	60, 600
Hooks, &c., Stove, Hanger for	J. Sigourney, A. T. Robiuson, and J. Shepard.	60, 581
Hoop, Cheese	E. A. Palmer	59, 636
Hoop for curing and packing cheese	W. B. Nickelson	59, 630
Hoops, Bale, Fastening for	J. F. Milligan	53, 230
Hoops, Barrel, Cutting	A. Goodyear	57, 120
Hoops, Cheese	H. W. Miller	55, 140
Hoops, Cheese, Expanding	R. Van Horn	57, 599
Hoops, Skirt	J. W. Bradley	52, 665
Hoops, Skirt	T. B. DeForest	58, 340
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Hoops, Wooden, Bending	J. Dobbins	59, 369
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Horses' feet, Stopping for	A. S. Wilkinson	57, 611
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Horses, Releasing from carriages	J. T. Guthrie	51, 941
Horses from kicking, Preventing	E. A. Gammon	54, 887
Horses from vehicles, Detaching	B. A. McConnaughey	60, 533
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Horse holders	W. B. Chapman	59, 710
Horse-power	G. W. Sanor and J. Stoffer	52, 753
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Horse-powers	J. B. Sweetland	57, 995
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Horseshoes	C. M. Werner	53, 930
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Horseshoes	C. M. Werner	58, 355
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Horseshoes	J. J. Peyton	59, 725
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Horseshoes, Making	H. J. Bachelder	55, 602
Horseshoe machine	J. Shinneller and J. Brislin	56, 280
Horseshoe nail machine	J. A. Whitney	51, 986
Horseshoe nail machine	G. W. Sargent and B. P. Rider	52, 081
Horseshoes, Punch for	C. Huie	58, 645
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Horseshoes, Tool for making	T. G. Thompson	59, 479
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Hose, Carrying, Device for	P. Frentz	57, 886
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House, Smoke and drying	H. A. Amelung	56, 690
House, Smoke, Metallic Portable	L. S. Stevens	59, 931
Houses, Ventilating	B. J. Burnett	52, 528
Houses, for opening and cleaning cotton, &c., Picker	R. Kitson	55, 118
Hubs	A. Hutson	58, 647
Hubs, Boring	L. A. Dole	53, 216
Hubs, Boring	D. C. Breed	53, 400
Hubs, Metallic	H B. Buch	57, 885
Hub, Metallic, for vehicles	J. Abbot	52, 255
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Hubs, Wagon, Boring	L. Mason	54, 750
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Hub or spool for curtain rollers	F. Pilling	53, 480
Hubs, Boxes in, Securing	W. Greenleaf	54, 529
Husking, shelling, and harvesting corn	D. A. Dickinson	58, 785
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Hydrants	H. C. Biggs and A. C. Flinn	53, 944
Hydrants	B. P. Bower	54, 845
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Hydrocarbon, Liquids, and other materials, Storing	P. C. P. L. Prefontaine	56, 508
Hydrocarbon, Refining	H. L. Smith	60, 585
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Ice-cream freezer	J. R. Champlin	55, 820
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Ice pick	E. G. Burnham	54, 852
Ice pick, nut crackers, &c.	G. L. Witsil	54, 653
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Impregnating substances with preservative material	E. Sabathe and L. Jourdan	58, 036
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India-rubber compounds, Colored	J. Malcolm	51, 846
India-rubber, gutta-percha, &c., Manufacturing of	E. L. Simpson	58, 902

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India-rubber hat and cap bands	W. H. Halsey	53, 920
India-rubber rollers	J. B. Forsyth	59, 580
India-rubber shoes	G. H. Fowler	54, 883
India-rubber tubes, &c	C. McBurney and J. B. Forsyth	53, 999
India-rubber and gutta-percha compounds, Manufacture	J. Malcolm	51, 847
India-rubber and gutta-percha compounds, Manufacture	J. Malcolm	51, 848
India-rubber and gutta-percha compounds, Vulcanized	J. Malcolm	51, 849
India-rubber and other fabrics, Corded binding for	C. A. Ensign	56, 393
India-rubber in connection with leather, Vulcanizing	A. Cutler	56, 670
Indicator, Adjustable cut-off and horse-power	A. Stuckenrath	54, 439
Indicator, Car seat	F. H. Carney	58, 771
Indicator, Dry dock	P. F. Campbell	56, 702
Indicator and damper regulator, Steam	C. H. Ford	52, 114
Indicators, Railroad station	A. S. Cox	51, 927
Indicators, Railroad station	C. C. Gale	52, 704
Indicators, Railroad station	P. E. and J. P. Gruger	53, 607
Indicators, Station, for railways	E. B. Van Winkle	59, 685
Indicators, Time, Labor	J. Higgins	60, 630
Indicators, Water, for steam generators	F. Chalfant	55, 819
Indicators for steam generators	J. H. Springer and W. M. Bartram	55, 732
Induction coils	J. Kidder	52, 054
Inhalers	D. H. Goodwillie	59, 386
Initial studs, Manufacture of	A. W. Overbaugh	56, 791
Injectors	P. C. Heinz	59, 602
Injectors, Feed-water	J. Robinson and J. Gresham	55, 218
Injectors, Oil, for steam engines	G. B. Drayton	57, 079
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Ink, Manufacture of	James, Amos, and W. H. Sangster	53, 379
Ink, Writing, Compound for making	A. D. Bowman	59, 540
Ink for printing postage stamps	J. Macdonough	52, 869
Ink from type, Removing, Composition for	A. M. Bouton	58, 370
Inkstand	S. Darling	51, 931
Inkstands	H. Bradford	53, 729
Inkstand and calendar, Combined	G. G. Percival	56, 603
Inkstand, sand box, calendar, envelope holder, and pen-rack, Combined.	G. Schmidt	56, 104
Insects, Destroying, Composition for	A. M. Turney	52, 345
Insects, Destroying, Composition for	G. M. Jaques	58, 423
Insects, Destroying, on trees and plants, Composition for	J. A. Elias	59, 986
Insects, Destroying, garden roller for	H. Gray	53, 439
Insects, Exterminating	E. Gilliam	54, 528
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Insulators, Telegraph	A. B. Ely	51, 934
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Iron, Cast, Combining with wrought iron	D. Read and J. F. Galley	53, 336
Iron, Coating, Composition for	W. C. Dunn	56, 539
Iron, Hardening	A. K. Kerpely	52, 656
Iron, Manufacture of	J. W. Nystrom	53, 658
Iron, Refining	J. F. Lauth	53, 012
Iron, Rolling	E. A. Harvey	54, 538
Iron, Sheet, Acid on, Neutralizing	J. H. Whitling	59, 787
Iron, Sheet, Coating with other metals	E. Morewood	57, 832
Iron, Sheet, Coating with tin and other metals	R. N. Allen and C. C. Hinsdale	53, 253
Iron, Sheet, Manufacture of	C. H. Perkins	53, 476
Iron, Sheet, Manufacture of	C. H. Perkins	52, 647
Iron, Sheet, Plates from, Treating	J. M. Jones, B. Spaulding, and S. Parkins.	56, 759
Iron, Sheet and bar, Manufacture of	W. M. Arnold	54, 838
Iron, Wrought, Combining with cast iron	C. M. Dupuy	52, 149
Iron, Wrought, Manufactured direct from the ore	W. Henderson	60, 002
Iron, Wrought, and steel, Manufactured directly from the ore	E. C. Haserick	53, 142
Iron chips and turnings, Melting and aggregating	A. Ludoff	52, 725
Iron frames for piano-fortes	W. B. Coates	52, 140
Iron holder	E. Whitehead	59, 804
Iron gutters	C. Hewitt	54, 154
Iron plates, Corrugated, for railroad wheels, Forming	F. Vester	53, 507
Iron railway sleeper	J. B. Thompson	58, 037
Iron and steel, Coating with gold, silver, &c	W. W. Pickslay	59, 644
Iron and steel, Combined, Manufacture of articles of	W. Gerhardt	52, 559
Iron and steel, Manufacture of	W. Gerhardt	52, 560
Iron and steel, Manufacture of	J. Absterdam	52, 121
Iron and steel, Refining	W. & W. N. Terwilliger and J. S. Lockwood.	56, 680
Iron and steel, Uniting	J. P. Price	60, 420
Iron and steel, Welding	A. J. Hindermeyer	60, 516
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Iron and steel for the manufacture of railroad rails, Uniting	W. Batty	57,059
Iron or steel, rolling	J. S. Seaman	57,388
Iron and other metals, Composition for	W. M. Arnold	55,452
Irons for curling hair	H. S. Maxim	57,354
Ironing board	S. A. Mort	57,170
Ironing hosiery	W. Aiken	57,455
Ironing machine, Hat	M. S. Drake	57,437
Isinglass, Purifying	J. Lewis and I. Stanwood	53,636
Ivory key-boards, Smoothing	M. Pratt	56,862
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Jack, Boot	H. N. Degraw	59,712
Jack, Carriage	J. C. Plumer	51,861
Jack, Carriage	M. Andriot	58,198
Jack, Carriage	J. F. Hammond	59,008
Jack, Hand, for congress gaiters	H. F. Dougherty	57,297
Jack, Lifting	H. Culver	51,807
Jack, Lifting	S. J. Parmele	51,963
Jack, Lifting	A. F. Wagner	52,096
Jack, Lifting	T. Sheldon	55,430
Jack, Lifting	L. Smith	56,111
Jack, Pegging	A. K. Washburn	52,095
Jack, Shoemakers'	L. L. Coon	54,691
Jacks, Carriage	M. Andriot	56,510
Jacks, Fence	C. Lewis	59,421
Jacks, Hoisting	J. W. Steed	60,080
Jacks, Hydraulic	J. Ryan	52,210
Jacks, Hydraulic	J. Ryan	52,324
Jacks, Lifting	J. W. Pettengill	52,596
Jacks, Lifting	D. Fasig	54,706
Jacks, Lifting	A. Higley	55,102
Jacks, Lifting	J. F. Hammond	57,439
Jacks, Lifting	A. Zink	57,814
Jacks, Pegging	G. A. Knowlton	54,369
Jacks, Shoe	T. L. Brown	51,993
Jacks, Spinning	G. Dawson	56,532
Jacks, Wagon	W. M. Doty	56,192
Jacks, Wagon	A. Dunn	56,538
Jar, Fruit	E. Bennett	52,379
Jar, Fruit	J. Johnson	53,151
Jar, Fruit	G. H. Russell	53,685
Jar, Fruit	R. M. Dalbey	55,248
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Jar, Fruit	J. Johnson	56,226
Jar, Fruit	W. Hunt	56,755
Jar, Fruit	B. I. Harris	56,934
Jar, Fruit	J. F. Winchell	58,185
Jar, Fruit	G A. Reynolds	58,674
Jar, Fruit	J. Borden	60,468
Jar, Fruit	W. F. Corpe	54,117
Jars, Fruit	J. R. and N. E. Lupton	55,128
Jars, Fruit	J. Letchworth	55,512
Jars, Fruit	G. Williams	59,699
Jars, Fruit, Constructing	G. M. Ramsey	54,015
Jars, Fruit, Covers for	F. A. Bunnell	52,525
Jars, Fruit, Stopper for	W. W. Lyman	51,844
Jars, Glass, Grinding the mouth edges of	O. O. G. Elliott	53,218
Jars, Preserve	F. H. Lauterbach	55,585
Jars, Preserve, Sealing ring for	J. Adams	51,785
Jars, Ring, Making	J. S. and T. B. Atterbury	59,159
Jaws for booms and gaffs of vessels	A. Manning	54,379
Jewelry, Setting stones in	F. Stefani	58,501
Joint, Rod, Connecting	T. Shaw	52,455
Joints, Revolving, Packing	J. Hatch	60,369
Journal box	E. F. Light	52,720
Journal box	D. K. Hickok	54,156
Journal box	E. F. Light	57,343
Journal box, Anti-friction	H. M. LeDuc	58,109
Journal box, Grindstone	T. W. Brown	58,768
Journal boxes, Composition for	G. W. Disman	52,829
Journal boxes, Lining for	P. S. Devlan	59,564
Journal boxes, Lubricating	A. R. Sherman	56,624
Journal and axle for carriage	L. Dorman	57,100
Journals, Lubricating	J. J. Stevenson	55,386
Journals, Oiling	J. E. Weaver	55,938
Journals and boxes	W. S. Mead	53,023
Journals for machinery and axles for vehicles	R. P. Gillett	52,561
Jug tops	H. Wright	53,076
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Kaolin, Apparatus for washing	D. Hull	54,355
Kegs, barrels, and casks	J. Merrill	58,451
Kegs and barrels	J. Merrill	58,452

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Kegs, Oyster, Stoppers for, Removing	S. Swartz	54, 039
Kettle, Tea	W. Caven	54, 502
Kettle, Tea, Covers for	C. Fownes	53, 290
Kettle bottoms	C. A. Moore	55, 145
Ke tles, Soap, Rendering apparatus, &c., Preventing the escape of gases from.	W. H. Pinner	59, 260
Kettles, boilers, stoves, &c., Covers to, Attaching	W. Hailes	60, 508
Kettles, wash boilers, and other vessels made of sheet metal	E. M. Manigle	59, 722
Kettles and other vessels, Bail for	A. D. Crocker	58, 224
Key, Door, Fastener for	S. Macferran	56, 071
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Key boards, Ivory, Smoothing	M. Pratt	56, 862
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Key seats, Cutting	J. K. Dizmer	58, 076
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Kiln, Drying	H. G. Bulkley	52, 524
Kiln, Grain-drying	N. Wallister	59, 102
Kiln, Malt	J. Gecmen	59, 583
Kiln, Tile	J. B. Dixon	54, 307
Kilns, Brick	E. Hancison A. Wagner, and A. Nulson.	58, 941
Kilns, Brick	J. McDonald	60, 029
Kilns, Bone-black	E. P. Eastwick	60, 492
Kilns, Lime	J. L. Livingston	52, 061
Kilns, Lime	C. D. Page	55, 699
Kilns, Lime	U. Cummings	59, 760
Kite	T. Perrins	51, 860
Knapsacks	J. K. Mizner	60, 034
Knife	W. Sausser	56, 998
Knife, Curriers'	J. P. Hawks	51, 942
Knife, Hay	F. J. Fischer	55, 765
Knife, Hay and pruning	J. Fasig	52, 279
Knife, Paring	J. Lebean	56, 235
Knife, Pocket, and pistol combined	A. J. Peavey	53, 473
Knife, Pruning	J. Surerus	52, 337
Knife, Pruning	C. McCrea	58, 659
Knife, Pruning	L. B. Morris	60, 225
Knife, Dirk, Spring	C. Hibbard	57, 902
Knife, Straw-cutting	G. Utley	54, 446
Knife, Straw and hay	D. Frasig	58, 237
Knife carrier	P. E. Cummings	58, 992
Knife cleaner	A. J. Sellon	54, 612
Knife cleaner	W. Christian and J. H. Marrow	57, 865
Knife-cleaning box	C. D. Copeland	53, 275
Knife handles	D. H. Merriam	54, 189
Knife polisher and knife and scissors sharpener	J. Wheeler	55, 404
Knife scourers	H. B. Hutchins and W. Horter	56, 664
Knife sharpener	W. Nash	52, 587
Knife sharpener	J. B. Pratt	56, 264
Knife sharpener	T. H. White	57, 804
Knife sharpener and polisher	E. Beeman	51, 789
Knife and cane stripper combined	R. Conarroe	56, 009
Knife sections for harvesters, &c., Tempering	A. B. Reynolds	57, 655
Knife and fork	F. C. Beach and A. A. C. Klaucke	57, 662
Knife and fork	J. D. Frary	58, 242
Knife and fork	J. B. H. Leonard	58, 269
Knife and fork, Combined	J. S. Jennings	57, 918
Knife and fork cleaner and scraper	N. W. Foye	53, 433
Knife and fork scourer	R. R. Pattison	53, 863
Knife and scissors sharpener	M. V. B. Howe	55, 867
Knife and scissors sharpener	J. J. Russ	56, 615
Knife and scissors sharpener	T. T. Prosser and J. Lawson	57, 564
Knife for removing corn from the cob	J. W. Jones	54, 170
Knife for removing hair from hides	B. Harrington	56, 144
Knife or fork rack	J. B. Hawley	54, 541
Knife to handle, Attaching	W. Clayton	57, 677
Knitting machine	M. T. Lamb	55, 420
Knitting machine	J. Dalton	58, 610
Knitting machine, Rotary	J. Holden	53, 000
Knitting-machine burrs, Self-lubricating	C. Allardice	55, 034
Knitting-machine needle	L. W. Fifield	56, 544
Knitting machines	T. Langham	53, 013
Knitting machines	J. A. and H. A. House	53, 224
Knitting machines	H. Thornton	53, 386
Knitting machines	J. Goodman	53, 530
Knitting machines	J. M. Armour	54, 812
Knitting machines	J. Hinkley	55, 103
Knitting machines	J. G. Wilson	55, 027
Knitting machines	W. W. Clay	55, 241

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Knitting machines	J. G. Wilson	55, 434
Knitting machines	J. and W. Thornton	55, 444
Knitting machines	A. B. Stillings	55, 734
Knitting machines	H. L. Williams	55, 968
Knitting machines	W. Cotton	59, 892
Knitting machines, Stop motion for	E. Kay	55, 308
Knitting machines, Take-up mechanism for	J. Lessels	55, 422
Knuckle joint	S. N. Taylor	52, 908
Knuckle joints	J. K. Collins	52, 969
Knuckle joints	J. H. Mears and C. W. Yale	60, 403
Label or tag	G. W. Storer	59, 678
Labels, Direction	M. J. Proctor	53, 233
Labels or tags for express companies	E. A. Locke and L. Henser	55, 879
Labels to bottles, Applying	J. S. and T. B. Atterbury	54, 665
Lacing device	E. C. C. Kellog	52, 645
Lacing device and brace	S. J. Shaw and W. E. C. Worcester	58, 955
Lacing for boots and shoes	C. Goodyear, jr.	55, 852
Lacing for boots and shoes	C. Goodyear, jr.	55, 853
Lacing for boots and shoes	L. A. Sprague	55, 923
Lacing, Slide, and shoe fastener	R. Adams	58, 364
Ladder	B. Pickering	54, 767
Ladder	C. Croley	58, 781
Ladder	G. Ckertizza	58, 984
Ladder, Extension	T. Watson and C. Perry	59, 297
Ladder, Extension, Fruit	E. Slater	59, 666
Ladder, Extension, Fruit	A. Rogers	51, 778
Ladder, Fruit	S. Hudson	52, 172
Ladder, Step	C. W. Brown	53, 566
Ladder, Step	A. Moore, jr	54, 387
Ladder, Step	H. P. Hammond and W. A. Hathaway.	55, 288 58, 984
Ladder, Step	E. P. H. Capron	55, 817
Ladder, Step	J. S. Lash	56, 957
Ladder, Step, Library	C. C. Schmitt	52, 211
Lamp	G. W. Mitchell	51, 852
Lamp bracket	T. W. Brown	56, 361
Lamp bracket	R. S. Tay and F. T. Fracker	60, 086
Lamp cleaner	E. F. Sutton	53, 898
Lamp cleaner	B. F. Horn	55, 862
Lamp chimney attachment	F. J. Tinkey	58, 915
Lamp chimney cleaner	F. Imhorst	51, 835
Lamp chimney cleaner	E. T. Hazeltine	55, 291
Lamp chimney lifter	J. H. Wilhelm and J. W. Larimore	54, 239
Lamp extinguisher	W. A. Richardson and H. D. Ward	57, 778
Lamp extinguisher	W. A. Richardson and H. D. Ward	53, 679
Lamp extinguisher	C. E. Abbott	59, 534
Lamp for petroleum	M. C. C. Church and E. H. Knight	57, 866
Lamp for vehicle	S. P. Dodge	55, 255
Lamp, Lard	C. F. Rees	55, 535
Lamp, Lard	T. Terrel	57, 215
Lamp, Reflecting and foot-warmer	C. S. Merwin and C. A. Metcalf	58, 453
Lamp, Soldering and blow-pipe	J. S. Hull	56, 051
Lamp, Street	J. G. Miner	55, 143
Lamp, Street	T. T. Markland, jr	55, 686
Lamp wicks	B. F. Walton	52, 231
Lamp wick adjuster	C. C. Stansell	52, 618
Lamp wick regulator	H. Mund and E. Huffmann	56, 250
Lamp and lubricating oil can	E. Ashcroft	60, 117
Lamp and candle stand and holder	G. Utley	57, 017
Lamps	I. Clark	52, 031
Lamps	D. L. Pickard	52, 316
Lamps	E. F. Rogers	52, 369
Lamps	C. Wilhelm	52, 480
Lamps	A. Harroun, jr	52, 711
Lamps	O. D. Woodbury	53, 089
Lamps	C. N. Tyler	53, 506
Lamps	E. Brown	53, 945
Lamps	R. S. Merrill	54, 935
Lamps	M. B. Dyott	55, 075
Lamps	R. A. Goodyear	55, 280
Lamps	D. Howarth	55, 771
Lamps	J. H. Beidler	55, 806
Lamps	B. J. Hoffacker	56, 497
Lamps	R. S. Merrill	56, 974
Lamps	C. H. Bagley	57, 064
Lamps	A. G. Smith	57, 587
Lamps	T. E. Sparks	57, 589
Lamps	C. Mulchahey	58, 459
Lamps	K. Riedel	58, 481
Lamps	W. H. Sangster	60, 068
Lamps	J. M. Perkins and M. W. House	60, 416
Lamps	G. Stobwasser	58, 361
Lamps, Burners to, Attaching	W. P. Miller	56, 775
Lamps, Electrical	G. G. Percival	53, 669

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Lamps, Extinguisher for	C. E. Abbott	55,973
Lamps, Extinguisher for	J. M. Howe	59,607
Lamps, Extinguisher and regulator for	C. E. Lyon	56,770
Lamps, Fountain	J. P. Driver	57,299
Lamps, Kerosene	J. H. Beidler and A. R. Crichfield	53,103
Lamps, Locomotive	J. Radley	55,903
Lamps, Magnesium	R. H. Thurston	54,442
Lamps, Magnesium	R. H. Thurston	55,393
Lamps, Ratchet wheels for, Fixture for	H. Topping and M. Gally	56,126
Lamps, Ventilator and Shade for	C. Recht	56,799
Lamps, Wick inserter for	W. T. A. Boardman	60,130
Lamps and gas burners, Heating shade for	A. H. Lochman	53,456
Lamps, &c., Suspension device for	H. Weed	59,689
Lancet, Spring	G. J. Capewell	55,620
Land leveller	F. Monroe	54,003
Land roller	A. S. Skiff	54,425
Lantern and foot-warmer, Combined	W. F. Bartlett	59,810
Lanterns	W. Burns	51,798
Lanterns	G. Peugeot	51,966
Lanterns	J. C. Moore	53,027
Lanterns	J. O. Harris	53,819
Lanterns	E. Conrad	54,059
Lanterns	A. M. Duburn	55,839
Lanterns	E. N. Jenkins	56,567
Lanterns	G. Peugeot	56,604
Lanterns	C. Moeller	57,167
Lanterns	W. P. Smith	57,988
Lanterns	J. H. Irwin	57,914
Lanterns	F. Meyrose	58,122
Lanterns	A. French	58,244
Lanterns	A. M. Duburn	58,392
Lanterns	J. O. Harris	58,942
Lanterns	L. F. Betts	59,705
Lanterns	J. O. Harris	59,717
Lanterns	A. G. Smith	59,865
Lauterns	J. Bellerjean	60,123
Lanterns	R. Chester	60,139
Lanterns	R. Chester	60,140
Lanterns	S. R. Wilmot	60,452
Lanterns, Hand	C. Engelskirchen	56,543
Lanterns, Railroad switch	E. E. and A. E. Dickerson	57,295
Lanterns, Street	B. A. Johnson	57,148
Lanterns, Street	A. R. and E. A. Hunt	60,377
Lap skiver	J. S. P. Taylor	58,508
Lard, Cooling	W. J. Wilcox	57,805
Lard. fat, &c., Cutting	C. Forschner	57,111
Lard, tallow, &c., Rendering and bleaching	J. S. Shapter	60,575
Larders, Ventilated	J. Sloan	57,642
Last	W. Wells	53,510
Last	E. T. Green	59,209
Laster, Shank	O. R. Clark and F. H. Slyter	52,389
Lasters, Shank	W. N. Flagg	52,280
Lasting pincers	G. Kump	52,055
Lasts	S. T. Hutchins	56,565
Lasts	W. L. Beardsley	56,882
Lasts	P. C. Clapp	59,359
Lasts, Darning	G. H. Babcock	58,199
Latch, Door	E. Manley	51,954
Latch, Door	A. H. Rowe	52,750
Latch, Gate	J. W. McLean	55,326
Latch, Stop mortise	F. A. Richardson	59,076
Latch fastenings	H. M. Jones	57,150
Latch fastenings	H. N. Avery	51,787
Latches	A. Hatch	53,374
Latches	D. W. Maurice	54,187
Latches	L. L. Crane	55,142
Latches, Door	H. L. De Zeng	53,585
Latches, Door	B. Erbe	59,373
Latches, Gate	F. Ketcham	57,152
Latches, Gate and door	B. D. Shaw	60,644
Latches, Knob	F. B. Pye	52,201
Latches, Knob	A. W. Upton	53,364
Latches, Knob	H. H. Elwell	53,526
Latches, Knob	W. T. Munger	53,745
Latches, Knob	R. Lee	57,930
Latches or locks, Reversible	A. T. Brooks	55,052
Lath, Cutting	C. Learned	54,180
Lathe carriers or dogs	L. P. Wilcox	60,451
Lathe chucks	J. A. Bunce	53,405
Lathe chucks	R. Rothwell	53,683
Lathe chucks	L. Von Gunten	60,292
Lathe clutches	R. Allen	60,113
Lathe dogs	W. Pimlott	60,238
Lathe rest for turning balls	W. T. Vose	55,749

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Lathe, Pivot	R. Lissenbee	53,994
Lathes, Turning	J. C. Wybell	57,054
Lathes, Turning	W. Simpson, Z. Oman, and S. Foreman.	57,984
Lathes, Turning	J. Burt	59,552
Lathes, Turning	R. W. Drew	60,155
Lathes, Turning	L. R. Faught	60,163
Lathes, Turning, Wood	A. Basse	58,758
Lathes, Turning, Wood	M. Spenli	60,647
Lathes, Watchmakers'	F. Shaller	57,775
Lathes, Wood, turning	L. Hull	53,003
Lathes, Wood, turning	W. H. Wusson	60,317
Lathes, Wood turning	J. B. West	54,047
Lathes, Wood turning	J. E. F. Leland	58,947
Lathes for cutting screws	J. Tangye	56,339
Lathes for turning ovals	F. Smith	52,900
Lathes for turning pen-handles	J. Keith	59,407
Lathes for turning scythe-snaths	S. Hinton	57,716
Lathes for turning shafting	J. J. Conley	58,605
Lathes for turning spherical shot and shell	C. Forster	52,244
Lathes for turning wagon hubs	H. C. Sisco	53,382
Lathes for turning wagon hubs	H. Inman	57,145
Lathes for turning whip stocks	L. Hull	56,419
Lathes, Feed stop for	A. P. Brown	56,172
Lathes, &c., Gearing for	W. Fitzgerald	54,519
Lathes, Rose engine	T. Lippiatt	57,158
Lathes, Tail stocks of, Securing	A. Thomas	53,058
Lathes, Tool and rest holder for	J. Wolfenden	56,840
Lathes, Tool rest for	J. Service	60,266
Lathes, Boring attachment to	C. E. McBeth	58,273
Lathes, Turning, Drill attachment to	J. McCrum	57,536
Lathes to turn tapering shafts, Tool for adjusting	W. N. Berkeley	56,164
Lead, Acetate of, Manufacture of	J. E. Fournier	56,505
Lead, Oxide of, Reducing	T. Taylor	56,635
Lead, White	C. Delafield	52,144
Lead, White	H. J. Overman	59,135
Lead, White, Manufacture of	P. Spence	53,093
Lead, White, Manufacture of	C. Delafield	53,583
Lead, White, Manufacture of	T. M. and A. G. Fell	56,685
Lead, White, Manufacture of	T. M. and A. G. Fell	59,901
Lead, White, Manufacture of	T. M. and A. G. Fell	59,902
Lead, White, Manufacture of	C. Delafield	55,249
Lead pipes, Pressing	R. Laying	55,315
Lead and zinc, Sulphuret of mixed, Treating	J. D. Whelpley and J. J. Storer	59,694
Lead from dross, Obtaining	C. Pickering	59,063
Leather, Boarding and graining	J. Parker	54,821
Leather, Clamping and stretching	E. Shaw	57,392
Leather, Creasing or ornamenting	J. M. Bent	58,761
Leather, Creasing, slicking, and skiving	C. C. Bellows	58,978
Leather cloth	T. Storey and W. B. Wilson	59,530
Leather, Cutting	C. S. Stearns	58,315
Leather, &c., Oil from, Extracting	J. A. Dean	54,303
Leather, Japanned	J. L. Newton	58,733
Lathes, Graining, Composition for	O. P. Whitman	52,920
Leather, Preparation of	M. W. Page	54,587
Leather, Piercing	G. V. Sheffield and J. F. Coburn	57,780
Leather, Punching	J. M. Bent	58,762
Leather, Rendering, more durable and flexible	L. G. Sourzac and L. Bombail	59,736
Leather, Rolling	W. P. Martin	52,728
Leather, Rolling	Q. Stoddard	60,277
Leather, Rolling up	J. E. Merritt	52,871
Leather, Rubber-coated	H. W. Joslin	59,402
Leather, Scouring	F. Davis	60,149
Leather, Splitting and skiving	S. H. Schenck	58,681
Leather, Stretching	W. Strevell	59,292
Leather, Stuffing and currying	T. McDonald	57,165
Leather, Substitute	P. Wenzel	53,549
Leather, Tanning, Arranging vats for	W. La Dew	54,647
Leather scraps, Treating	H. B. Farwell	53,800
Leather chamfering machine	C. H. Helms	56,938
Leather dressing machine	L. Loeffler	55,125
Leather splitting machine	C. W. Baldwin and L. D. Hawkins	53,771
Leather splitting machine	J. A. Marden	53,741
Leather splitting machine	A. H. Van Gieson	54,043
Leather splitting machine	J. A. Marden	54,571
Leather straps, Clasps for	A. B. Conde	51,926
Leather in connection with India-rubber, Vulcanizing	A. Cutler	56,670
Leeches, Artificial	F. Wolff	59,306
Legs, Artificial	J. Madden	51,953
Legs, Artificial	L. Legran	52,057
Legs, Artificial	H. L. Byrd	52,964
Legs, Artificial	J. W. Weston, F. Buckner, and R. Boeklen.	53,931
Legs, Artificial	H. A. Kimball and A. J. Lawrence	54,364

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Legs, Artificial	S. P. Sleppy	54,970
Legs, Artificial	J. Bringhurst	55,459
Legs, Artificial	D. Gilson	55,645
Legs, Artificial	R. H. Nichols	56,983
Legs, Artificial	D. Bly	57,666
Legs, Artificial	J. S. Drake	57,691
Legs, Wooden, Boring tools for making	E. Osborne	57,756
Legs, Wooden, Tools for working	E. Osborne	57,755
Leggings	A. L. Munson	53,231
Leggings and sleeves, Attachment for	J. K. O'Neil	54,585
Lemon squeezer	V. Fogerty	52,928
Lenses	C. B. Boyle	52,672
Lenses, Fluid	O. Warden	57,602
Lenses, Fluid	D. A. Woodward	60,109
Lenses, Photographic, Combining	C. B. Boyle	52,129
Lenses for photographic purposes, Combination of	J. Zentmayer	55,195
Letter-box file	T. K. Sterrett and W. R. Farrell	59,287
Letter-box, Postal	D. D. Foley	55,636
Letter file	J. C. Hadden	53,817
Letter file	F. Ashley	57,274
Letters, parcels, &c., Receiving and delivering	A. E. Beach	59,739
Levels and dams	B. Britten	57,852
Levels	D. Mastin	58,271
Levels, Plumb	M. W. E. Doran	53,795
Levels, Spirit	R. Ledig	52,579
Levels, Spirit	A. J. Vandegrift	54,626
Level and square, Combined	O. R. Chaplin	54,503
Levelling streets	L. Von Froben	52,915
Levers, Valve, Throttle	E. Doe	57,879
Lice on trees, Destroying	M. O. Sullivan	56,633
Lid supporters	J. C. Barlow	58,936
Life preserver	E. Rousseil	51,971
Lifter for stove cover and culinary vessels	J. Old	55,894
Lifter for stove covers, &c	S. Maltby and J. R. Brown	58,442
Lifting bar	D. P. Butler	55,618
Light, Head, for engines	P. Budenbach	54,850
Light, Producing	P. Carlevaris	56,336
Light, Vault	M. J. McCormick	58,859
Light and heat, Explosive liquids for the production of, Using	W. Beschke	57,245
Lights, Engine, Head	J. Radley	55,904
Lights, Head	M. M. Rounds	54,020
Lights, Head, Adjustment of	C. D. Gibson	54,714
Lights, Head, Locomotive	J. Radley	59,750
Lights, Locomotive, Head	T. S. Ray and S. E. C. Cleveland	53,871
Lights, Signal, Railroad	E. H. Tobey	60,594
Lights, Vault	G. H. Johnson	57,515
Lighters, tools for making	A. Kleinschmidt and F. Schlater	52,173
Lightning rods	A. S. Sherwood	52,329
Lightning rods	L. J. Hawley	52,411
Lightning rods	L. B. Gusman	52,541
Lightning rods	H. B. Comer and J. Denton	58,382
Libraries, Systems for	J. M. W. Geist	51,823
Limbs, Artificial	A. McOmber	56,243
Limbs, Artificial	J. Monroe	58,351
Limbs, Artificial, Lining for	J. W. Weston	53,206
Lime, Superphosphate of	A. De Figaniere	59,978
Lime-kilns	P. Griscom and J. H. Miller	54,717
Linch-pin	L. B. Cushman	53,220
Liniment	D. Edwards	52,697
Liniment	J. W. Woodring	52,778
Liniment	R. M. Moyle	55,342
Lining of oil barrels	R. V. Jones	57,333
Liquid, Bottling	J. Mathews, jr	53,019
Liquid hydrocarbons, Burning	A. J. Works	57,429
Liquids, Cooling	B. G. Martin	53,082
Liquids, Evaporating and distilling	J Adair and H. W. C. Tweddle	56,343
Liquids, Hydrocarbon for transmitting heat	W. C. Baker	58,755
Liquids, Hydrocarbon and other materials, Storing	P. C. P. L. Prefontaine	56,508
Liquids, Measuring	F. H. Houghton	54,548
Liquids, Measuring	E. H. Dutton	59,761
Liquids, Measuring	G. W. Devoe	60,344
Liquids, Silicated, for manufacture of soap, and for other purposes.	J. T. Ryan	58,303
Liquids, Thiefs and tests for	N. Stafford	51,879
Liquids for carburetting and enriching gases used in illuminating and heating.	J. F. Boynton	58,054
Liquids of gases, Delivering	N. W. Wheeler	52,477
Liquids to casks, Supplying	J. O. Woodruff	56,483
Liquor mixer and egg beater	E. C. Strange	57,596
Liquor to centrifugal machine, Supplying	W. R. Meins	58,864
Liquors, Cooling	T. H. Miller	56,978
Liquors, Extracting specimens of	J. M. Naglee	56,596
Liquors, Ripening	W. Mont Storm	57,009

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Liquors, Malt, Cooling	W. Allenderff	59,336
Liquors, Spirituous, Refining	G. W. Ferris	56,197
Liquors, Spirituous, Compound for fining, purifying, and mellowing.	W. Thompson	52,943
Lock	W. Corbett and W. Burns	55,244
Lock	R. B. Burchell	57,857
Lock-keeper, Adjustable	T. Strobridge	56,828
Lock, Pad	J. E. Wootten	60,454
Lock, Sash	D. P. Lacy and J. A. Bartlett	57,733
Lock, Seal	W. McLean	57,539
Lock, Trace	D. Tuttle	59,483
Lock for mail bags and carpet sacks	J. B. Logan	56,069
Lock for doors of baggage cars	T. Slaight	57,986
Lock for receiving throttle valves	C. C. Torrence	56,639
Locks	J. Sargent and H. W. Covert	51,973
Locks	M. McGonnigle	52,183
Locks	C. F. Toll	52,226
Locks	H. Alhman	52,372
Locks	J. Loch and G. Bayer	52,864
Locks	A. Hardy, F. F. and G. A. Walker	52,995
Locks	T. A. Auberlin	53,941
Locks	W. B. Dodds	53,959
Locks	L. G. Hoffman	54,162
Locks	C. Claude	54,297
Locks	W. C. McGill	54,383
Locks	D. A. Pratt	54,952
Locks	W. Bohannan	55,047
Locks	W. Bohannan and F. J. Johnson	55,048
Locks	B. V. M. Brouse	55,460
Locks	M. Stachelin and H. Young	55,549
Locks	I. D. Bush	55,616
Locks	H. and S. W. Budd	55,814
Locks	P. S. Felter	56,394
Locks	G. A. Sherlock	56,808
Locks	G. M. Wood	57,423
Locks	W. W. Harder	57,508
Locks	E. R. Hopkins	57,508
Locks	J. Sargent	57,574
Locks	J. T. Guthrie	57,704
Locks	A. W. Snow	58,688
Locks	W. Sellers	58,898
Locks	A. O. Miles	59,048
Locks	E. Lawshe	59,615
Locks	A. B. Mullett	59,628
Locks	E. A. G. Roulstone	60,257
Locks, Alarm	S. A. Andrews	58,043
Locks, Gun	F. Schenck	57,978
Locks, Hoop	G. N. Beard	58,760
Locks, Knob	F. G. Johnson	55,500
Locks, Mail	T. Ascherfeld	53,096
Locks, Row	J. B. Kelly	55,309
Locks, Row	J. W. Noreross	56,086
Locks, Safe	A. A. Oat	56,790
Locks, Safe	W. B. Dodds	57,040
Locks, Sash	J. Hollingsworth	52,492
Locks, Till	C. Tucker	55,397
Locks, Trunk	A. W. Scharit and L. Oppenheimer	54,024
Locks, Trunk	T. S. Brown	54,849
Locks for trunks	J. G. Kast	58,548
Locks, Keys in fastening	S. B. Longhborough	55,126
Locks or latches, Reversible	A. T. Brooks	55,052
Locks to safes, vaults, &c., Attaching	T. Dolan	59,981
Locket and watch cases	J. G. Konvelinka	56,575
Locomotive head light	J. Radley	59,650
Locomotive fire grate	R. Eaton	59,329
Locomotives	M. W. Forney	52,406
Locomotives	J. C. Parker	58,127
Locomotives, Draught pipes for	J. M. Foss	55,479
Locomotives, Smoke-stack for	H. Brooks and J. Ball	59,175
Loom harness	D. C. Brown	51,794
Loom harness, Heddle eyes for	J. L. Cheney	51,920
Loom for weaving cloth with swells or gores	M. Opper	57,177
Loom for weaving slat blinds	M. Free	56,493
Looms	O. W. Gordon and N. T. Frame	52,161
Looms	B. Oldfield	52,192
Looms	J. Braun	53,265
Looms	I. Orndorff	53,857
Looms	I. Orndorff	53,858
Looms	C. F. Bartling	53,943
Looms	B. H. Jenks and R. B. Goodyear	55,011
Looms	J. Welsh	56,474
Looms	G. P. Garretson and J. M. Hoffman.	56,925
Looms	L. Scofield	57,448

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Looms	I. N. Hodson	57,717
Looms	J. B. Kershaw	58,024
Looms	H. Dale	58,609
Looms	H. A. Ellis	59,987
Looms	G. L. White	60,101
Looms, Circular, for weaving hats	P. L. Slayton and C. L Kane	59,138
Looms, Fancy	G. Crompton	51,928
Looms, Hand	C. L. McDowell	52,306
Looms, Hand	C. Unverzagt	52,626
Looms, Hand	J. Pelsor	53,330
Looms, Hand	J. L. Branson	53,398
Looms, Hand	A. Carter and R. Spake	54,501
Looms, Hand	W. B. Walker and N. D. Hartley	57,226
Looms, Hand	D. Mendenhall	58,865
Looms, Hand	S. C. Mendenhall and S. Sparks	59,132
Looms, Hand	J. Whitehead	60,305
Looms, Harness motion for	R. Collins	54,058
Looms, Harness motion for	A. L. Anderson	54,661
Looms, Harness motion for	W. W. McGregor	56,077
Looms, Harness motion for	C. Miller	56,976
Looms, Harness motion for	G. Crompton	59,972
Looms, Harness of, Operating	W. R. Andrews	58,968
Looms, Heddle motion for	B. H. Jenks and R. B. Goodyear	55,010
Looms, Let-off for	E. Wright	52,780
Looms, Let-off for	S. Estes	54,066
Looms, Let-off for	D. Hussey	59,024
Looms, Let-off and take-up for	J. F. Kirkwood	58,433
Looms, Narrow ware	L. J. Knowles	59,613
Looms, Narrow ware	L. J. Knowles	60,388
Looms, Picker arms for	G. W. Paterson	55,959
Looms, Picker staff arrester for	E. and H. C. Phillips	52,367
Looms, Picker staff of, Operating	P. A. Sherman and F. Baxter	53,892
Looms, Power	P. W. Hart	57,712
Looms, Power, Picker motion for	H. Elliott	56,913
Looms, Power, for weaving concave and convex surfaces	W. Breitenstein	58,589
Looms, Roller temple for	J. Mathis	54,269
Looms, Roller temples for	W. W. Dutcher	53,423
Looms, Shuttles in, Operating	J. Schottenfels	53,350
Looms, Shuttles in, Operating	J. J. and E. Harrison	59,767
Looms, Shuttle binder for	C. Duckworth	57,300
Looms, Shuttles and bobbins for	C. Unverzagt	54,445
Looms, Stop motion for	A. Carmichel and W. Barney	59,962
Looms, Stop motion of	A. Marchington	57,350
Looms, Take-up for narrow ware	M. Wolf	58,708
Looms, Temples for	G. L. White	57,646
Looms for weaving figured fabrics, Shuttle box motion in	C. Duckworth	51,932
Looms for weaving narrow wares	B. Oldfield	58,464
Looms for weaving slatted window shades	G. Hasecoster	57,898
Looms for weaving tapes, ribbons, &c	L. J. Knowles	54,742
Lounge bedstead	B. Cerf	51,582
Lounge, Folding	J. W. McDonough	60,400
Lounges	A. and D. Short	56,809
Lubricating apparatus	J. L. Wiggin and E. Folsom	56,306
Lubricating apparatus	J. C. Eggleston	58,339
Lubricating apparatus	W. Hamilton	58,409
Lubricating bush	S. H. Everett	57,695
Lubricating carriage axles	N. B. Brown	54,246
Lubricating machinery, &c	J. H. Lester	52,301
Lubricating, Material for	M. P. Ewing	58,020
Lubricator	G. Scott	53,190
Lubricator	C. Schott	57,196
Lubricator for steam engines	J. Storer	53,195
Lubricators	T. R. Robinson and R. E. Jones	60,251
Lubricators for steam engines	J. Broughton	58,767
Lumber, Drying	J. W. Hanna	59,998
Lumber, Drying	J. H. Osgood	60,043
Lumber, Grooving	M. E. Carter	57,474
M.		
Machinery, Self-oiling and adjusting, Bearing for	T. S. Brown	60,616
Machinery, Spiral-friction clutch for	J. Hanley	60,509
Magnesium for burning, Preparing	C. H. Wing	54,266
Magneto-electric apparatus	J. Kidder	58,105
Magneto-electric machines	H. Wilde	59,738
Magnets for telegraphs	T. P. Shaffner	60,432
Magnets, Electro, Induction coils for	J. B. Lyon and A. Doll	58,439
Magnets, Sounder	S. F. Day	55,627
Mail bag	J. Fyc	55,416
Mail bags, Receiving and delivering	J. J. Cooper	53,417
Mail bags on railway cars, Receiving and delivering	P. N. Maine	57,936
Mail bags upon railway cars, Receiving and delivering	J. Fredenburg and G. A. Davidson	54,710
Mail bags, Waterproof	J. M. Jarrett	59,228
Mail-pouch box	M. Smith	54,787

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Mallet, Elastic	A. C. Eddy	52, 696
Mallets, Dental	C. Poor	58, 133
Malt extractor	L. Hoff	60, 631
Malt, Extract of, Condensed	T. Hawks	60, 370
Malt, Sprouting	J. Geemen	53, 135
Mandrel, Expanding	I. Beetison	59, 948
Mandrels, Adjustable	C. W. Le Count	55, 681
Mangle and wringer	D. Cumming, jr	53, 580
Mangler, Meat	G. H. Tift	58, 000
Manacles	A. Rankin	52, 745
Mangers	J. Johnson	58, 263
Manure, Bones for, Grinding	J. Wister	54, 635
Manuscripts and books, Holding	J. E. Comstock	56, 184
Maps, Geographical	E. A. and A. C. Apgar	58, 748
Maps, curtain, and blinds, Hanging	J. F. Landis	52, 577
Maps, Printing, Blocks or plates for	G. W. Bacon	57, 056
Marble, Cutting and finishing	J. W. Maloy	53, 845
Marble, Ornamenting	A. Hill	60, 007
Marble, Polishing	J. W. Maloy	59, 916
Marble-polishing machine	J. W. Maloy	58, 852
Marker and harrow, Combined	A. Pierce	57, 961
Marking ground for planting	P. McQuaid	56, 970
Marking stock	G. M. Devin	54, 127
Mash machine	J. T. Forrer	53, 597
Mash machine	M. Brand and C. P. Hoffman	60, 330
Masts, Boom connection for	B. McGrath	55, 515
Mat, Table	C. Webber	55, 402
Match compound	L. Lanszweert	53, 454
Match plates, Moulders', Composition for	G. P. Darrow	56, 187
Match safe	T. S. Hathaway	58, 253
Match safe, Pocket	C. E. Fowler	59, 830
Matches, Framing-machine for	J. Bentz	55, 808
Materials, Artists', Drying	G. D Jones	60, 382
Matter, Composition of	W. K. Wyckoff	58, 532
Mattress or cushion	L. Bauhoefer	59, 945
Mattress, Spring	C. Van Dyeck	57, 223
Measure and flower sifter	G. G. Carver	52, 266
Measure and funnel, Combined	E. Grattan	59, 590
Measurer, sifter, and flour dipper	G. G. Carver	54, 857
Measuring distances, Instrument for	J. J. Daley	53, 420
Measuring distances, Instrument for	J. Frankle	58, 241
Measuring tires for wheels	J. Foster	56, 546
Measures, Adjustable	H. Kraut	58, 838
Measures, Funnel	C. W. Fuller	57, 494
Measures, Liquid	J. Dailey	57, 097
Measures, Tailors'	G. W. T. Harley	52, 566
Measures, Tailors'	G. Beard	52, 950
Measures, Tailors'	G. Beard	52, 951
Measures, Variablo	L. Coates	59, 186
Meat chopper	F. Ashley	54, 274
Meat chopper	D. W. Baker	54, 667
Meat chopper	C. A. Foster	55, 414
Meat cutter for sausages	J. Segondy	57, 197
Meat pounder, dough kneader, &c	P. Perry	56, 091
Meat, Preserving	H. B. Meech	59, 247
Meat, Preserving, Composition for	J. J. Harrison	56, 217
Meat, Preserving and cutting	J. Tilton	58, 511
Meat under brine, Keeping	J. Burgum	55, 463
Meat and vegetable chopping machine	H. W. Russell	52, 449
Meat and vegetable cutter	E. P. Whitney	56, 305
Meats, fish, vegetables, and other substances, Cooling and preserving.	C. F. Pike	60, 552
Meats, fruits, and other substances, Preserving	E. S. Bartholomew	60, 462
Mechanical movement	H. Smith	52, 334
Mechanical movement	C. B. Lewis	53, 312
Mechanical movement	P. J. Smith	54, 972
Mechanical movement	W. Brant	56, 354
Medallions	J. Powell	59, 648
Medical composition	T. W. Speissegger	55, 730
Medical composition	P. G. Rosenblatt	55, 540
Medical compound	G. B. Bieler	51, 914
Medical compound	S. P. Clayton	52, 052
Medical compound	A. S. Talbert	52, 091
Medical compound	W. Cawein	52, 530
Medical compound	W. C. Smith	52, 760
Medical compound	H. De Lapaturelle	54, 304
Medical compound	J. V. Halse	54, 550
Medical compound	E. G. Perry	54, 944
Medical compound	M. Richardson	55, 160
Medical compound	E. V. Conway	55, 214
Medical compound	G. Bode	55, 234
Medical compound	J. P. Eisenhart	55, 474
Medical compound	P. Pounci	55, 534
Medical compound	H. H. Lockwood	55, 123

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Medical compound	W. T. Salie	55,911
Medical compound	L. Marmaduke	56,072
Medical compound	P. M. Devos	56,533
Medical compound	J. B. Edwards	57,884
Medical compound	J. M. F. Hall	58,249
Medical compound	B. Sampson	59,750
Medical compound	D. D. T. Benedict	59,756
Medical compound	Z. Marshall	59,776
Medical compound	D. W. Stuttsman	59,803
Medical compound for hog cholera	M. Boyes	58,371
Medical compound for the eyes	G. Mershon	53,852
Medical or aromatic substances, Vapors of, Diffusing	A. L. Fleury	59,576
Medicators, Mechanical	P. A. Royce	58,301
Medicine	W. H. Farnham	53,595
Medicine	F. J. Carroll	53,946
Medicine	J. S. Anders	55,449
Medicine	N. Peter	57,561
Medicine	G. Montgomery	57,357
Medicine	N. C. Lincoln	58,652
Medicine	L. O. Moreno	59,052
Medicine	W. Ransom	59,070
Medicine	J. Levy	57,155
Medicine	N. Kieffer	58,106
Medical composition	A J. Runyan	53,348
Medicine for hog cholera	J. L. Mason	56,075
Medicine for hog cholera	W. M. Runyon, R. H. Heller, and D. B. Morris.	58,890
Medicine for hog cholera	G. H. Baugh	59,946
Medicine for horses	C. L. Hammond	59,216
Medicine to cure cholera, &c	A. E. Parrott	55,898
Medicine for the cure of consumption, &c	T. Bell	54,097
Medicines, Administering, Apparatus for	S. Curtis, jr	53,790
Melodeons	P. Carbach	57,472
Melodeons	F. Hoddick	59,128
Melodeons and organs	S. Taylor	52,623
Melodeons and organs, Knee-swell for	S. Taylor	52,339
Melodeons, &c., Reed plates for	G. W. Ingalls	59,027
Melting and aggregating iron chips and turnings	E. C. Haserick	53,142
Metal loop for tags	S. B. Fay	60,624
Metal bands, Perforating	A. Leland	53,228
Metal, Sheet, Attaching sides of	P. H. Niles	55,016
Metal, Sheet, Coated	G. H. Hazelton	59,599
Metal, Sheet, Forming lock joints in	J. Shaw	57,980
Metal, Sheet, Strips of, Securing together	W. J. Gordon	56,494
Metal, Sheet, Wash boilers, kettles, and other vessels made of	E. M. Manigle	59,722
Metal, Sheets of, Punching	J. M. Riter and L. J. Farquhar	58,676
Metal ware, Sheet, Manufacture of	M. Wells	51,883
Metal ware, Sheet, Seams for	P. H. Niles	55,015
Metal or wood, Apparatus for driving into the ground	W. W. Winter	52,799
Metal and other products from ores and minerals, Obtaining	J. D. Whelpley and J. J. Storer	59,696
Metal, Spinning machine for	C. F. Spaulding	54,621
Metallic band fastening	A. Barbarin	58,574
Metallic bar, Triple ribbed	J. Y. Smith	54,786
Metallic characters on paper, &c., Forming	J. Lanza	55,679
Metallic oxides, Reducing	J. Reese	55,710
Metallic oxides, Reducing, and refining the metal resulting therefrom.	J. Reese	57,969
Metallic paper fastener	G. W. McGill	56,587
Metallic plates, Corrugated	R. Montgomery	56,779
Metallic rods or bars, Upsetting and forming articles from	M. Seward	59,464
Metals, Coating with metal	I. Adams, jr	57,271
Metals, Compressing, condensing, and extending	J. F. Shearman	56,807
Metals, Grinding and polishing, Artificial stones for	H. Von Unwerth	54,628
Metals from ores, Separating	J. A. Hitchings	54,726
Metals from ores, Separating	J. H. Elward	55,261
Metals from ores, Separating	S. R. Krom	58,839
Metals from ores, Separating	S. R. Krom	59,509
Metals from ores, Separating	S. R. Krom	59,510
Metals from ores, Separating	S. R. Krom	59,773
Metals from ores, Precious, Extracting	V. B. Ryerson	54,412
Metals from ores, Volatile, Separating	J. C. Coult and J. Roach	53,951
Metals, Polishing, Composition of matter for	A. M. Sawyer	60,264
Metals, Precious, Cleaning and brightening	J. D. Whelpley and J. J. Storer	58,011
Metals, Precious, Separating, from other substances	V. B. Ryerson	53,885
Metals, Punching corrugated	M. J. Montgomery	54,580
Metals, Rolling	H. Waters	52,630
Metals, Rolling	J. S Seaman	53,049
Metals, Rolling	A. C. Stone	56,825
Metals, Rolling	H. Baines	60,322
Meter, Liquid and spirit	W. Murphy	56,156
Meter, Spirit	W. Magrowitz	58,114
Meter pots, Salino	G. Sewell	54,073
Meters, Drill cable	L. C. Bristol	53,564
Meters, Gas	J. T. Scholte	57,268

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Meters, Grain	W. S Sampson	54, 072
Meters, Grain	W. Schnebly	57, 580
Meters, Water	C. Weed	53, 509
Meters, Water	E. Spencer aud E. L. Meyer	55, 547
Meters, Water	G. Sickles	58, 735
Meters aud motors, Water	A. B. Lawther and G. F. Letz	58, 843
Meters for gas aud liquids	H. H. Stuart	60, 437
Microscopes	H. L. Smith	52, 901
Microscopes	O. N. Chase	56, 178
Microscopes, Binocular eye-pieces for	R. B. Tolles	56, 125
Milk, Cooling	J. O. Moore	56, 780
Milk, Preserving	N. P. Holmes	57, 721
Milk, Preserving	N. P. Holmes	60, 190
Milk shelves	D. B. Sturdevant, W. C. Parsons, and F. Wheeler.	53, 500
Milk, Condensing, Vacuum vessels for	J. R. Pond	54, 950
Milk and other substances, Condensing, Vacuum pan for	G. R. Percy	52, 197
Mill, Cane	W. Briggs	59, 889
Mill, Cider, and fruit press	L. A. Warner	58, 514
Mill, Founders' cleansing	S. D. Horton	57, 907
Mill, Mortar	L. B. Pitcher	60, 055
Milling tool	J. T. Smith	53, 496
Millstones, Facing, Hammer or buhr for	L. Sauers	54, 258
Millstones, Hanging	L. Fagin	59, 201
Millstones, Picking	J. H. Gray	60, 176
Millstones, Ventilating	A. D. Lagoguey	54, 268
Mills, Cane	J. W. Richardson, D. L. Davis, and W. C. Howell.	54, 960
Mills, Cider	J. Redleiu	52, 203
Mills, Cider	S. Males	52, 583
Mills, Cider	S. J. Homau	55, 297
Mills, Cider	H. Sells	57, 833
Mills, Cider	J. H. Williams	59, 700
Mills, Cider	T. Appleget	59, 807
Mills, Cider	W. Shaw	59, 864
Mills, Cider, Presses for	M. Stevens	56, 824
Mills, Coffee	C. R. Edwards	53, 129
Mills, Coffee	N. Chapman	58, 772
Mills, Coffee	J. G. Lane	58, 946
Mills, Coffee, spice, and other, Handle for	J. Kinzer	54. 740
Mills, Fanning	J. W. Free	52, 840
Mills, Fanning	J. Mumma	55, 526
Mills, Fanning	L. Shultz	55, 725
Mills, Fanning	C. K. Ehle	56, 912
Mills, Fanning	H. W. Curtis	57, 483
Mills, Flouring, Bolts for	S. Godfrey	51, 939
Mills, Grinding	H. P. Straub	53, 358
Mills, Grinding	S. Godfrey	53, 603
Mills, Grinding	C. and A. Kaestner	53, 989
Mills, Grinding	T. J. Sloan	54, 260
Mills, Grinding	T. J. Sloan	54, 261
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Mills, Grinding	J. W. Baldwin	54, 486
Mills, Grinding	E. Harrison	54, 535
Mills, Grinding	J. Aubin	55, 792
Mills, Grinding	J. Hutchinson	55, 872
Mills, Grinding	J. W. Miles	56, 246
Mills, Grinding	C. D. Young and J. McLean	56, 659
Mills, Grinding	C. Bollinger	57, 677
Mills, Grinding	E. and A. H. Nordyke	57, 754
Mills, Grinding	C. F. Dean	58, 719
Mills, Grinding	C. P. Benoit	58, 977
Mills, Grinding	S. M. Miller	59, 435
Mills, Grinding	E. Peugeot and J. B. B. C. Laurent	59, 528
Mills, Grinding	T. F. Smith	59, 674
Mills, Grinding	G. L. Witsil	60, 105
Mills, Grinding	J. M. Miller	60, 404
Mills, Grinding, Coolers for	P. C. Fritz	59, 382
Mills, Hominy	J. Hayden	53, 611
Mills, Hominy	B. Kemp	60, 385
Mills, Paint	G. P. Zindgraf	55, 572
Mills, Paint and drug	M. Bishop	52, 953
Mills, Quartz	C. P. Waguer	52, 347
Mills, Quartz	H. Kellogg	52, 363
Mills, Quartz	T. J. Chubb	52, 532
Mills, Quartz	F. Sundell	53, 237
Mills, Quartz	C. P. Wagner	55, 181
Mills, Quartz	J. T. Bonnell	55, 995
Mills, Quartz	A. Moore	56, 433
Mills, Quartz	S. W. Bullock	56, 487
Mills, Quartz	H. H. Scoville, P. W. Gates, and D. R. Frazer.	59, 463
Mills, Quartz, Sluice for	H. Logan	52, 723
Mills, Quartz, Stamp	A. Herdlein	56, 047

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Mills, Quartz, Stamp	W. Wright	60, 110
Mills for crushing quartz	C. P. Colby	58, 777
Mills, Saw	J. Handy	53, 977
Mills, Saw	M. M. Bishop	54, 673
Mills, Saw	E. P. Irons	55, 497
Mills, Saw	I. H. Newton	57, 556
Mills, Saw	P. Pryibil	57, 565
Mills, Saw	G. W. Coddington	58, 068
Mills, Saw	W. W. Ewing	59, 200
Mills, Saw	S. Jackson, jr	59, 841
Mills, Saw	D. Lane	59, 846
Mills, Saw	J. A. Holford	60, 374
Mills, Saw	J. Davis	60, 485
Mills, Saw	J. Davis	60, 486
Mills, Saw	E. H. Stearns	60, 648
Mills, Saw, Head blocks for	G. H. Clemens	52, 533
Mills, Saw, Head blocks for	E. H. Stearns	52, 904
Mills, Saw, Head blocks for	D. C. Baughman	53, 393
Mills, Saw, Head blocks for	G. W. Rodebaugh	54, 777
Mills, Saw, Head blocks for	C. Leffingwell	56, 145
Mills, Saw, Head blocks for	J. A. Griggs	56, 929
Mills, Saw, Head blocks for	J. W. Parsons	57, 180
Mills, Saw, Head blocks for	B. F. McKinley	60, 401
Mills, Saw, Head blocks for	H. H. Gridley	54, 330
Mills, Saw, Head blocks for	J. M. and S. F. Stanton	54, 432
Mills, Seed	E. Young	54, 995
Mills, Shingle	T. H. Cox	42, 507
Mills, Smut	R. Heneage	56, 672
Mills, Sorghum	R. Conarroe	56, 185
Mills, Sugar	G. Bevitt	52, 127
Mills, Sugar cane	N. B. Carr	54, 293
Mills, Sugar cane	E. W. Skinner	55, 379
Mills, Sugar cane	A. Eaton	57, 883
Mills for grinding sugar cane	T. L. Roberts	52, 207
Mills, Wind	P. Loeffler	53, 458
Mills, Wind	L. Reese	54, 407
Mills, Wind	J. H. Heyser	57, 133
Mineral water, Preventing sediment in	A. R. Lawrence	59, 418
Minerals, Oil, &c., from, Extracting	H. P. Gengembre	52, 283
Minerals, Oil, &c., from, Extracting	H. P. Gengembre	52, 284
Miners' fuse lock	G. Hagenmeyer	58, 639
Mines, Cages for hoisting purposes in	H. Berry, H. Hochholzer, and F. Denver.	54, 490
Mines, Safety cage for	J. Evans	56, 915
Mining coal, minerals, &c	W. Locke, J. Warrington, W. E. Carrett, W. E. Marshall, and J. Telford.	54, 833
Mining and artillery blasting	T. P. Shaffner	60, 572
Mirror	P. A. Dailey	56, 723
Mirror, Solar, for photographic purposes, Arrangement of	W. Crane and W. H. Pease	54, 118
Mirror and stand	W. H. Hughes and H. L. Lent	57, 723
Mirrors, Hand	J. E. Farris	52, 551
Mirrors, Hanging	J. S. and H. F. Gray	55, 647
Mirrors, Metallizing	E. Dodi	59, 734
Mirrors, Silvering	R. Keck	56, 507
Mitering machine	F. A. Howard	57, 325
Mitre boxes	D. Bull	55, 576
Mitre boxes	J. A. McKinstry	59, 046
Mitre joints, Turning	A. Johnson	55, 499
Mitres, Adjustable	P. A. Snyder	60, 646
Mitten, Knitted, Machine made	A. C. Carey	54, 108
Molasses, Manufacture of	G. W. Sayre	53, 887
Mop	J. Sangster and M. Boyd	55, 429
Mop	M. H. Wiley	54, 473
Mop handle	H. B. Malbone	55, 135
Mop head	L. H. Thomas	53, 704
Mop head	G. H. Hammer	54, 146
Mop head	L. C. Rodier	55, 961
Mop head	R. W. Whitney and A. C. Stockin	58, 703
Mop head	F. M. Hardison and J. A. Hooper	58, 817
Mop head	I. E. Weston	59, 299
Mop heads	C. B. Clark and O. S. Garretson	54, 860
Mop holder	W. Morehouse	58, 872
Mop wringer	M. P. Carpenter	52, 136
Mop wringer	J. M. Enos	55, 413
Mop wringer	W. and W. S. Gillett	59, 586
Mop wringer	J. F. White	60, 102
Mop and scourer	W. T. Grant	52, 705
Mop and scrubber	W. T. Grant	57, 703
Mordant	E. F. Prentiss	54, 203
Morocco, Graining	G. R. Johnson	54, 360
Mortising machine	W. Nangel	58, 878
Mortising machines	J. B. Stark	56, 820
Mosquito bar	E. A. G. Roulstone	56, 994
Mosquito bars	L. Sawyer	54, 259

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Mosquito bars	C. L. S. Walker	56,128
Mosquito and fly bar	T. H. Jennings	53,149
Mosquito canopy	M. Bliss	54,674
Mosquito canopies, Frames for	I. E. Palmer	58,283
Mosquito guard	A. D. Puffer	53,334
Mosquito guards for bedsteads	A. D. Puffer	54,595
Mosquito net	J. G. De Coursey	55,473
Motion, Communicating	W. Bicknell	60,126
Motion, Reciprocating, converting, into rotary	J. B. Page	57,178
Motion, Reetilinear, Converting, into rotary	J. B. Eads	51,815
Motion, Rotary, Intermittent	L. J. Knowles	53,308
Motion, Transmitting	F. Yeiser	52,354
Motion, Transmitting	J. Brizee	56,171
Motion, Transmitting	T. C. Entwistle	57,693
Motor, Steam and water, Combined	F. Millward	54,469
Motor, Water, Steam injected	J. D. Whelpley	53,067
Motors, Water	H. B. Stiles	52,459
Motors and meters, Water	A. B. Lawther and G. F. Letz	58,843
Motors or engines, Air	P. A. Ensign	58,397
Mould, Brick	J. M. Ferrell	57,041
Mould, Cigarette, and box combined	N. T. and S. B. Gassette	52,842
Mould, Glass blowers'	O. P. Shrinkle	54,617
Mould, Pipe	G. W. Connell and B. B. Quinn	52,971
Mould, Tile	J. C. Field	54,518
Mould tips, Sugar	F. Nishwitz	55,888
Mould and butter worker	T. D. Smith	56,112
Mould for casting heads upon screws, tacks, &c	D. MeArthur	52,790
Mould for casting throttle valves	R. B. Angus	57,062
Mould for hub boxes, Preparing	J. G. Holt	55,296
Mould for vulcanizing rubber	D. D. Parmelee	53,034
Moulders' clamp	C. Truesdale	51,903
Moulders' clamp	J. B. Crowley	51,995
Moulding	A. King	57,822
Moulding articles from paper pulp	E. H. Knight	53,631
Moulding, Candle, Tubular plunger for	H. Ryder	59,460
Moulding castings	P. W. Lamb	55,504
Moulding materials admitting of cohesion	J. Greaeen, J. A. Foster, and J. H. Hooper.	56,496
Moulding, Planing	T. Dickinson	55,833
Moulding and pressing pliable materials	G. C. Howard	55,658
Moulding and casting apparatus	G. Ross	53,883
Mouldings, Making	T. J. Close	58,599
Mouldings, Ornamenting	J. W. Campbell	59,817
Mouldings, Ornamenting	G. F. Goetze	60,173
Moulds, Axleskein	J. G. Holt	55,295
Moulds, Brick	S. Shreffler	53,191
Moulds, Brick	T. James	54,734
Moulds, Butter	J. S. Bullard	54,054
Moulds, Dental	G. H. Hurd	57,726
Moulds, Glass	M. Sweeney, J. E. Mathews, and T. Hartley.	52,338
Moulds, Jointed	M. B. Stafford	57,791
Moulds, Plastering, for cornices	C. P. Walter	58,701
Moulds, Soap	J. MeRoberts	53,645
Moulds, Sugar	F. Nishwitz	55,887
Moulds, Facing, Composition for	R. B. Smith	56,817
Moulds for casting curved pipe	S. Williams	54,826
Moulds for casting flange pipe	G. T. Sheldon	53,690
Moulds for castings, Making	J. G. Holt	55,294
Moulds for casting pulleys	W. D. Rinehart	55,713
Moulds for plastic material	J. J. Wiggin	60,310
Moulds for hard rubber, Filling	J. C. Robie	51,865
Moulds for peat machines, Material for dusting	T. H. Leavitt	53,014
Moulds, Chill, Taking air off	G. R. H. Leffler	53,993
Moulds, Sealing wax adhering to, Preventing	N. W. Kumber	56,576
Movement, Mechanical	H. Smith	52,334
Movement, Mechanical	C. B. Lewis	53,312
Movement, Mechanical	P. J. Smith	54,972
Movement, Mechanical	W. Brant	56,354
Movement, Mechanical	C. W. Saladee and W. Veach	58,304
Mowing machines	R. G. Pike	52,317
Mowing machine guards	A. Simonds	54,652
Mowing machines	J. G. Perry	53,039
Mowing machines	E. and D. Hinchley	55,654
Mowing machines	A. Rank	55,905
Mowing machines	A. Reed	56,093
Mowing machines, Track clearer of	J. M. Davis	54,124
Mowing and reaping machine	J. G. Perry	53,040
Mowing and reaping machine	D. H. Thayer	53,198
Mowing and reaping machine	M. Clark	55,467
Mowing and reaping machines	L. B. Hoit	52,167
Mowing and reaping machines	J. M. Canfield, H. E. Coleman, and E. P. Wheeler.	53,110
Mowing and reaping machines	H. R. Lavey	54,374

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Mowing and reaping machines	M. Easterbrook	54, 875
Mowing and reaping machines	R. Brown	56, 893
Mowing and reaping machines	G. S. Reynolds	58, 026
Muff	M. Mahler	53, 760
Muff, cape, and victorine, Combined	D. Isaacsohn and A. Cohn	59, 227
Muffs, Ladies'	T. Eckert	55, 260
Mules for spinning	S. D. Paul	53, 036
Mules, Self-acting	L. C. Dam and J. Wigley	51, 930
Mules, Self-acting	J. Sutherland	56, 829
Music, Leaves of, Turning	G. M. Hopkins	51, 999
Musical attachment to bird cages	G. Gunther	56, 407
Musical instruments	L. Marquez	53, 375
Musical instruments	J. and E. Foster	53, 803
Musical instruments	D. Schuyler	56, 106
Musical instruments	R. W. Carpenter	57, 861
Musical instruments	G. Woods	58, 032
Musical instruments	H. C. Baudet	58, 959
Musical instruments, Keyed	I. T. Packard	54, 395
Musical instruments, Reed	R. Burdett	59, 354
Musical instruments, Reed	R. Burdett	51, 994
Musical staff	J. C. Cline	52, 534
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Nail extractors	J. H. Hogan	55, 105
Nail machine	W. Wickersham	52, 479
Nail machine	R. Ward	54, 981
Nail machine	S. L. Gould	58, 637
Nail machine, Horseshoe	J. A. Whitney	51, 986
Nail machine, Horseshoe	G. W. Sargent and B. P. Rider	52, 081
Nail machine, Horseshoe	S. S. Putnam and L. H. Dwelley	54, 256
Nail machine, Horseshoe	H. E. and C. W. Woodford	59, 327
Nail and tack machine	N. and N. W. Leonard	53, 154
Nail plate feeder	C. D. Hunt	53, 924
Nail plate feeders	T. A. Searle	55, 722
Nail plate feeders	J. L. Wiggin	55, 755
Nails	A. M. Polsey	60, 056
Nails, Coffin, and screw-heads, Finishing	A. A. Randall	55, 783
Nails, Drawing, Tools for	D. T. Robinson	59, 657
Nails, Finger, Cutting	C. C. E. Schwartz	54, 966
Nails, Harness	F. Reynolds	56, 611
Nails, Horseshoe	T. Fowler	55, 270
Nails, Horseshoe	G. W. Sargent and B. P. Rider	55, 912
Nails, Horseshoe	A. Whittemore	58, 520
Nails, Horseshoe, Forging	J. Roy	58, 485
Nails, Making	S. G. Reynolds	58, 137
Nails, Picture	F. J. Seymour	55, 917
Nails, Picture	A. D. Judd	59, 404
Nails, Picture, Heads for	H. P. Brooks	52, 781
Nails, Shoe	A. A. Wilcox	57, 234
Nails and tacks	A. Speer	56, 114
Nails and tacks, Making	O. L. Bassett, T. R. Bearse, and W. B. Wilber	58, 577
Napkins, table	A. L. Munson	53, 468
Neck-ties	J. B. Gardiner	52, 557
Neck-ties	H. Bendix and G. H. Fleisch	53, 102
Neck-ties	J. R. Cluxton	53, 272
Neck-ties	G. B. Taylor	53, 197
Neck-ties	W. H. Hart, jr	54, 536
Neck-ties	J. W. Newman	56, 252
Neck-ties	J. H. P. Pine	57, 762
Neck-ties	I. W. Hamlet	58, 168
Neck-ties	J. G. Hitchcock	55, 859
Neck-ties, Fastening	H. H. Heineman	58, 414
Neck-ties, Fastening for	J. A. Eshleman	56, 196
Neck-tie holders	W. H. Halsey	58, 344
Neck-ties, India-rubber	J. Sangster and O. W. Seeley	54, 607
Neck-ties, Paper	E. Childs, jr	54, 858
Neck-ties, Paper	W. Hunter	54, 168
Neck-ties and collars	C. W. Powell	59, 646
Neck-tie and collar attachment	G. V. Woods	58, 561
Neck-ties, collar, and bosom, Combined	T. Rosenthal	57, 048
Neck-tie supporters	W. H. Hart, jr	57, 129
Neck-tie supporters	J. A. Eshleman	57, 694
Neck-tie supporters	C. L. Lockwood	55, 317
Neck-tie and collar supporter	N. H. Vosburgh	57, 413
Neck-yoke	A. C. Cook	54, 690
Neck-yokes	G. L. Turney	59, 737
Needle cases	C. L. Spencer	58, 314
Needle-threaders	W. Byfield	54, 856
Needle-wrappers	J. M. Armour	52, 256
Needles, Knitting machine	L. W. Fifield	56, 544
Needles, Knitting machine	O. Low	53, 638
Needles, Tag		

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Needles, Wrappers for	L. E. Totten	59, 095
Needles for caning chairs	M. E. Hurley	56, 421
Needles for sewing machine	M. Stannard	55, 927
Needles into paper, Sticking	G. P. Farmer	53, 799
Nets, Fishing	E. A. Field	55, 635
Nets, Fishing	W. Maxwell	59, 429
Nets, Fly, Cutting	A. D. Hoffman	55, 860
Netting, Horse	J. Cantner and M. Ulrich	56, 900
Newspaper file	J. W. Foard	54, 320
Nitrolcum and nitro-glycerine, Packing	T. P. Shaffner	56, 620
Nitroleum, Blasting with	T. P. Shaffner	60, 573
Nozzle for fire engines, Water-spreading	W. Gurley	55, 285
Nozzles for fire engines	C. Oyston	53, 175
Nozzles for hose pipes	R. F. Moore	60, 036
Numbering machine	S. W. Soule and C. L. Sholes	59, 675
Nut cracker and tobacco cutter	H. Tilden	55, 177
Nut cracker, ice pick, &c	G. L. Witsil	54, 653
Nut cracker, boot-jack, tack hammer, and tack puller, Combined	G. R. Osborn and J. Crandell	54, 008
Nut tapping machine	F. Votteler	55, 965
Nut tapping and bolt screwing machine	W. W. Hubbard	52, 415
Nuts	L. Till	56, 124
Nuts, Making	E. Kaylor	56, 062
Nuts, Making	W. W. Hubbard	58, 104
Nuts, Tapping	D. Reese	56, 095
Nuts and washers	C. P. Geisscnhamer	57, 042

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Oar swivel	M. Fryer	58, 402
Observatory	S. B. Sawyer	58, 680
Offal, Deodorizing	A. and E. Lister	52, 863
Oil, Distilling	J. B. Grant	57, 311
Oil, Distilling	S. Andrews	58, 197
Oil, Extracting from leather, &c	J. A. Dean	54, 303
Oil, Floating, Collecting	A. Ralston	54, 014
Oil, Lubricating	H. T. Slemmer	52, 897
Oil, Lubricating	L. M. Mott	54, 193
Oil, Lubricating	J. M. Lippincott	57, 737
Oil, Refining	E. G. Sutherland	56, 121
Oil, &c., Extracting from minerals	H. P. Gengembre	52, 283
Oil, &c., Extracting from minerals	H. P. Gengembre	52, 284
Oil for paint, &c., Compound	D. S. Robinson	60, 557
Oil from fish, Extracting	E. H. Woodward	57, 427
Oil from streams, Collecting floating	H. E. Towles	55, 178
Oil from streams, Floating, Collecting	E. C. Summers	55, 388
Oil from wells, Collecting the light	J. Johnson	54, 917
Oil from wells, Obtaining	O. Rotton	52, 209
Oil from wells, Obtaining	L. Phleger and G. G. Lobdel	56, 989
Oil from wells, Obtaining	W. Shoupe	59, 782
Oil from Wells, Indicating the flow of	J. B. Christian	54, 859
Oil, paraffine, wax, &c, Bleaching	C. Adams	52, 509
Oil for fuel, Burning	R. A. Cheesebrough	58, 379
Oil-cloth, Printing	J. Marchbank	51, 898
Oil fire tester, Carbon	G. E. Shaw	56, 107
Oil mill tubes	O. B. Latham	56, 234
Oil-socket tools, joint for	R. Gracey	55, 086
Oilers	J. Broughton	52, 959
Oilers	L. H. Olmstead	54, 394
Oilers	C. J. Hauck	54. 540
Oilers	G. J. Capewell	56, 004
Oilers	J. King	56, 233
Oilers	P. Laflin	58, 107
Oilers and oil-cans	J. E. Weaver	58, 157
Oilers, Tubes to, Attaching	S. V. Beckwith	56, 163
Oiling bodies rotating around shafts	O. Tufts	60, 444
Oils, wines, and other liquors, Distilling and refining	A. Foubert	60, 166
Oils, Extracting, Essential	V. Squaza	52, 764
Oils, Hydrocarbon, Generating and burning vapor of	H. R. Foote	58, 087
Oils, Hydrocarbon, Purifying	J. Fordred	54, 267
Oils, Hydrocarbon, Refining	P. Weisenberger	54, 984
Oils, Treating	H. K. Taylor and D. M. Graham	54, 978
Oils, Hydrocarbon, Treating	H. K. Taylor and D. M. Graham	59, 751
Oils, &c., Treating	H. L. Smith	60, 076
Optical instruments	L. Heath	54, 542
Ordnance	L. W. Wright	55, 193
Ordnance	L. W. Broadwell	55, 609
Ordnance, Breech-loading	J. B. Moody	53, 026
Ordnance, Breech-loading	L. W. Broadwell	55, 762
Ordnance, Breech-loading	W. J. Murphy	60, 540
Ordnance, Operating	J. B. Eads	56, 021
Ordnance, Operating	J. H. Field	56, 395
Ordnance, Operating	J. B. Eads	57, 962
Ordnance, Revolving	N. L. Milburn	57, 751
Ordnance and fire-arms	R. White	57, 607

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Ore crushers	Z. Wheeler	53,066
Ore crushers	J. Fowler	54,884
Ore crushers	C. W. Stafford	59,676
Ore crushers	M. B. Dodge	60,154
Ore quartz crushers	J. Fowler	58,089
Ore or quartz crushers	E. P. McCarthy	58,116
Ore separator or jigging machine	T. Davey	54,697
Ore washer	G. B. Hamilton	53,221
Ores, Desulphurizing	A. H. Tait and J. W. Avis	52,090
Ores, Desulphurizing	B. G. Noble	52,191
Ores, Desulphurizing	J. S. Briggs	53,266
Ores, Desulphurizing	M. B. Mason	53,742
Ores, Desulphurizing	V. Ryerson	57,194
Ores, Desulphurizing	F. W. Crosby and W. Helm	57,293
Ores, Desulphurizing	J. A. Hitchings	58,100
Ores, Desulphurizing and disintegrating	D. Minthorn	52,875
Ores, Gold and silver, Desulphurizing	A. L. Fleury	56,027
Ores, Gold, silver, and copper, Disintegrating and desulphurizing.	F. F. Brower and G. C. Campbell	52,132
Ores, Reducing	G. B. Simpson	57,394
Ores, Gold, silver, and copper, Reducing refractory	C. W. Harvey	53,444
Ores, Roasting, desulphurizing, and smelting	J. D. Whelpley and J. J. Storer	58,012
Ores, Separating	J. D. Whelpley and J. J. Storer	53,718
Ores, Metals from, Separating	J. A. Hitchings	54,726
Ores, Metals from, Separating	J. H. Elward	55,261
Ores, Metals from, Separating	S. R. Krom	58,839
Ores, Metals from, Separating	S. R. Krom	59,509
Ores, Metals from, Separating	S. R. Krom	59,510
Ores, Metals from, Separating	S. R. Krom	59,773
Ores, Metals from, Precious, Extracting	V. B. Ryerson	54,412
Ores, Metals from, Volatile, Separating	J. C. Coult and J. Roach	53,951
Ores, Treating	C. F. Carpenter	55,818
Ores, Treating	J. C. Coult and J. Roach	56,378
Ores, Treating, with chlorine	E. Gaussoin	56,549
Ores, Metalliferous, Treating	W. L. Raht	57,376
Ores, Washing	M. A. Woodside	58,931
Ores of copper and other metals, Treating, to obtain metals and other products therefrom.	W. Henderson	60,514
Ores and minerals, Metal and other products from, Obtaining.	J. D. Whelpley and J. J. Storer	59,696
Organ reed	A. M. Brush	57,671
Organs	W. Robjohn	54,603
Organs, Reed, Swell of, Operating	A. E. Thompson	52,771
Organs, &c	D. Schyler	52,892
Organs, Harmoniums, &c	W. Dawes	52,940
Organs, Key-boards for	M. Baumgarten	53,728
Organs, Valve arrangement for	M. Baumgarten	55,573
Organs and melodeons	S. Taylor	52,623
Organs and melodeons, Knee swell for	S. Taylor	52,339
Ornamenting and gilding surfaces	M. W. Brown	52,673
Ottoman, Boot blacking	D. B. Boynton	52,381
Oven	A. Whittock	58,522
Oven, Steam	J. G. Whitlock	52,235
Oven for annealing iron	S. Reynolds	52,605
Oven for gas cook stove	L. Erving	58,398
Oven and stove-pipe drum	J. Beebe	53,077
Ovens, Bakers', Turn-table for	R. Shaler	58,489
Ox-bow pin	E. S. Woodford	52,923
Oxide of lead, Reducing	T. Taylor	56,635
Oxides, Metallic, Reducing	J. Reese	55,710
Oxides, Metallic, Reducing and refining the metal resulting therefrom.	J. Reese	57,969
Ox-yokes	W. B. Krum	54,176
Ox-yokes, Bow-pin for	E. G. Gale	57,887
Oyster crackers	W. P. Lyon	54,566
Oyster dredging apparatus	W. Belbin	59,812
Oysters, Preserving	E. T. Gilmore	59,833

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Packing animal and vegetable substances	F. Stabler	53,355
Packing for deep well tubes	J. J. Parker	58,468
Packing for oil wells	O. Redmond	59,319
Packing for oil wells	W. Wilkinson	53,073
Packing for piston-rods	W. P. Woodruff	57,243
Packing for pump piston	J. Carter	54,295
Packing for pumps	C. Hood	51,831
Packing, Elastic, Manufacture of	N. Jenkins	54,554
Packing for steam engines, Fibrous	J. L. Husband	56,054
Packing, Piston	E. T. Prindle	57,375
Packing, Piston	C. H. Clark	53,949
Packing, Piston	A. S. Cameron	56,699
Packing, Piston	A. W. Jackson	57,916
Packing, Piston	W. A. and T. B. Powers	58,176
Packing, Piston	J. Broughton	58,766
Packing, Piston	W. G. Snook and O. C. Patchell	59,143

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Packing, Piston	F. J. Roth	60,062
Packing, Piston	B. Lowe	60,395
Packing, Piston-rod	E. T. Prindle	53,542
Packing, Piston-rod	F. Wright	56,658
Packing, Piston-rod	R. Martin	57,163
Packing, Piston-rod	C. P. Benoit	58,204
Packing piston, Ring for	J. B. Root	57,189
Packing pump pistons	M. N. Allen, J. Rouse and J. Melcher	51,999
Packing, Tube, Well	S. E. Hewes	51,945
Packing revolving joints	J. Hatch	60,369
Packing ring for pistons of steam engines	J. F. Bogardus	57,037
Packing slide valve for steam engines	N. W. Wheeler	55,406
Packing, Metallic, for stuffing-boxes	C. F. Janriet	52,575
Packings for deep wells	J. K. Robinson and D. A. Strong	52,448
Packings, Piston-rod	J. P. McLean and J. Vandercar	59,918
Packings, Well	J. J. Parker	58,469
Pad, Carpet, Stair	G. W. Chipman	53,573
Pad, Furniture	J. E. Earle	59,371
Padlocks	C. W. Saladee	55,166
Padlocks	C. W. Saladee	55,167
Padlocks	C. W. Saladee	56,450
Padlocks	C. W. Saladee and W. Armstrong	56,451
Padlocks	C. W. Saladee	56,616
Padlocks	C. W. Saladee	56,617
Padlocks	E. M. and J. E. Mix	58,278
Padlocks	J. E. Wootten	60,454
Pail, Dinner	D. Howarth	54,817
Pail, Milk	J. Carton and W. Ralph	55,621
Paint	H. A. and D. E. Longsdorf	55,510
Paint	J. L. Geroldsek	56,322
Paint	R. B. Smith	56,814
Paint	T. C. Lamb	58,840
Paint, Composition	E. Oberlander, H. Weiss, and E. Bagnicki.	53,387
Paint, Composition	A. Ferris	59,573
Paint, Composition for	W. C. Hurd	58,421
Paint to surfaces, Applying	J. W. Rugman	54,565
Paint for ships' bottoms	G. W. Morse	58,458
Paint, Fire-proof, Composition of matter for rendering	J. B. Harris	56,044
Painting metallic roofs, Composition for	C. D. Smith	54,426
Paints, and coating wood, stone, &c., Improvements in	W. Coggeshall	60,478
Palm leaf, straw, &c., Bleaching	F. Perrin	56,860
Pan, Baking	S. West	59,732
Pan, Confection	H. Wathew	59,325
Pan, Dust	A. B. Hoffman	58,825
Pan, Vacuum	C. Wahl	54,629
Pan, Vacuum, For condensing milk and other substances	G. R. Percy	52,197
Pans, Metal, Sheet	M. S. Sager	57,261
Pans, Metal, Sheet	O. W. Way	59,104
Pans, Metal, Sheet, Wiring	F. M. Woods	58,162
Pans for evaporating	H. F. Schroder	60,564
Pans, &c., Amalgamation, Composition for coating	C. H. Golding	52,040
Pantaloons protectors	C. W. S. Heaton	56,221
Pantographic machines	E. Oldham	54,759
Paper bosom machine	S. B. Hill	53,615
Paper clamps	A. Faber	52,403
Paper collar machines	C. R. Brown and W. Wright	54,244
Paper cuffs or wristbands	A. A. Evans	56,737
Paper-cutting machine	C. Montagne	53,169
Paper-cutting machine	J. F. and G. W. Tapley	56,679
Paper cutter, Bookbinders'	M. Riehl	58,482
Paper, Drying and bleaching pulp	L. Dodge	56,732
Paper, Enamel, Polishing	W. F. Wright	56,682
Paper boards, pipes, &c., Manufacture of	N. C. Szerelmey	54,082
Paper boxes, Cutting corners of	D. Whitlock	58,183
Paper fastener	C. L. Alexander	58,365
Paper fasteners	G. C. W. Morgan	58,667
Paper fastener, metallic	G. W. McGill	56,587
Paper file	W. C. Choate	53,114
Paper for postage stamps	H. Loewenberg	53,081
Paper holder	E. J. Toof	52,343
Paper holder	D. M. Smith	58,687
Paper, Lace, Manufacture of	C. Lang	53,991
Paper neck-ties	J. Sangster and O. W. Seeley	54,607
Paper pins	E. H. Boswell	54,676
Paper-making machinery	E. B. Bingham	58,051
Paper-making machinery	S. G. and G. S. Rogers	59,661
Paper, Manufacture of	W. Russell	57,192
Paper, Manufacture of	G. W. Hurlbut	58,944
Paper, Manufacture of	T. P. Shaffner	59,281
Paper packing for joints of steam engines	J. Ross	59,456
Paper pulp	J. W. Dixon	51,813
Paper pulp	J. W. Dixon	52,694
Paper pulp	J. W. Dixon	54,308

Invention or Discovery.	Name of Patentee.	No.
Paper pulp	J. W. Dixon	54,309
Paper pulp, Bleaching	H. L. Jones and D. S. Farquharson	53,152
Paper pulp, Making	J. W. Dixon	52,543
Paper pulp, Making, Apparatus for	J. W. Dixon	52,544
Paper pulp, Making, Apparatus for	H. and F. Marx	59,042
Paper pulp, Manufacture of	J. Easton, jr., and F. Thiry	52,091
Paper pulp, Manufacture of	J. W. Dixon and G. Harding	54,510
Paper pulp, Manufacture of	H. B. Meech	54,932
Paper pulp manufacture, Material for	A. de Gogorza	51,810
Paper pulp, Washing	L. M. Wright	54,993
Paper pulp, Moulding articles from	E. H. Knight	53,631
Paper pulp for bleaching and for other purposes	J. W. Dixon	55,834
Paper pulp, Wood fibres to, Reducing	H. Voelter	55,031
Paper pulp from wood, Manufacture of	A. K. Haxstun	52,994
Paper pulp from wood, straw, &c.	J. W. Dixon	52,545
Paper pulp from wood, Making	A. Meucci	53,165
Paper pulp from wood, straw, and other materials	J. W. Dixon	53,835
Paper pulp from wood, straw, and other materials	J. W. Dixon	55,836
Paper pulp from straw, Preparing	J. Priestly and T. C. Bradbury	55,706
Paper pulp from wood, straw, and other vegetable fibrous substances.	J. W. Dixon	52,546
Paper pulp, Wood, straw, &c., for the manufacture of, Treating	H. L. Jones and D. S. Farquharson	55,418
Paper ribbon, Holding	W. Orr and G. F. Wright	58,466
Paper shirts	H. M. Remington	54,408
Paper skirts for ladies	J. H. Hayward	58,641
Paper socks	J. W. B. Covington	52,540
Paper stock, Bleaching	J. Tiffany and H. B. Meech	56,833
Paper stock, Manufacture of	J. Tiffany	56,832
Paper undersleeves, Ladies'	H. M. Remington	54,773
Paper, Water-proof, Manufacture of	S. M. Allen	53,094
Paper, Water and fire proof	T. Irving, J. McNeil, G. W. Rich, and C. J. Field.	60,635
Paper, Enamelled, Polishing	S. Shepard and A. M. George	56,457
Paper, wood, cloth, &c., Saturating, with paraffine	S. Gwynn	52,788
Paper, Circular, or other fans, Binding	R. T. Smith	59,783
Paper, Rolls for pressing, sizing, and calendering	F. Curtis	51,929
Paper, Safety	J. M. Willcox	56,650
Paper, Self-sealing button holes, Patches for	T. Griffin	57,314
Paper, Wall, Hanging	J. W. Davis	58,784
Paper, Wearing apparel made of	A. T. Denison and E. P. Furlong	60,488
Paper, Alkali used in the manufacture of, Recovering waste	T. F. Lehmann	53,839
Paper, &c., Forming metallic characters on	J. Lanza	55,679
Paper, &c., Preparation of, for photographic use	W. Gibson	60,626
Paraffine, Saturating wood, cloth, paper, &c., with	S. Gwynn	52,788
Parasols and fans	W. H. White	54,799
Parasols, Feather-covered	G. Anton	56,691
Parcels, letters, &c., Receiving and delivering	A. E. Beach	59,739
Parer and corer, Apple	H. Selick	57,391
Paring, cutting, and coring machine	W. Weaver	53,754
Paris white and whiting, Improvement in	W. W. Chipman	60,142
Paste, Prepared	S. Merwin	58,454
Paste, Prepared, for bookbinders	J. Woodward	52,779
Patterns, Making, Machine for	S. Huffman	55,869
Patterns, Shirt-bosom	M. Rosenthal	52,888
Pavement	E. Whitehead	56,303
Pavement	D. Huestis	56,563
Pavement, Belgian	C. Guidet	58,407
Pavements	J. Hartlieb	59,390
Pavements, &c., Composition for	G. W. Davis	58,718
Pavements, walks, &c., Composition for	W. C. Dodge	58,789
Pea sheller	G. T. Savary	58,305
Pea-shelling machine	M. Bray and J. A. Talpey	52,356
Pea and bean sheller	L. Cutting	53,956
Pea and bean sheller	W. K. Lewis	54,927
Peaches, Cutting and stoning	W. D. Mayfield	53,642
Pearl and pot ash, Manufacture of	B. F. Jewett	57,728
Peas, Shelling	G. Clark, jr	56,370
Peat, Drying	H. Bradford	57,469
Peat, Drying	G. Weissenborn	58,926
Peat, Grinding	J. B. Lyons	60,378
Peat, Moulding	E. Weissenborn	55,565
Peat, Moulding and drying	E. H. Ashcroft	54,663
Peat, Preparing	H. Y. Hind	53,547
Peat, Preparing	E. H. Ashcroft	54,088
Peat, Preparing	S. Marden	55,205
Peat, Preparing	E. H. Ashcroft	54,839
Peat, Preparing	L. Ellsberg	57,489
Peat, Preparing, for fuel	S. Marden	53,538
Peat, Preparing, Tank for	A. Betterley	51,913
Peat, Slicing and drying	A. H. Emerson	58,190
Peat for fuel, Preparing	H. Winter and F. W. Newton	58,528
Peat and other substances for fuel, Preparing	L. S. Robbins	60,248
Peat, Preparing and feeding to furnaces	J. Yates	54,052
Peat machine	T. J. Wells	52,472

Invention or Discovery.	Name of Patentee.	No.
Peat machine	T. H. Leavitt	53,011
Peat machine	D. Wellington	53,065
Peat machine	J. Hodges	53,935
Peat machine	N. F. Potter	54,402
Peat machine	J. H. Rae	55,018
Peat machine	A. Moffatt	55,339
Peat machine	S. D. and S. Gilson	56,206
Peat machine	M. B. Stafford	56,626
Peat machine	T. J. Wells	59,882
Peat machine	J. B. Lyons	60,397
Peat machines	S. Marden	54,186
Peat machine, Monlds for, Material for dusting	T. H. Leavitt	53,014
Peat, Draining, Cistern for	E. H. Ashcroft	53,769
Peg rasper	E. Townsend	53,200
Pegging machine	W. Fitzgerald	59,903
Pegs for shoes	G. W. Day	53,124
Pegs, Cutting, out of boots and shoes	T. Corey	54,692
Pen holder	E. D. Babbitt	58,572
Pen and pencil holder	J. M. Clark	56,007
Pen and eraser combined	J. Schott	56,455
Pen rack, inkstand, wafer or sand box; calendar, letter, and envelope holder combined.	G. Schmidt	56,104
Pen and pen holders	J. T. Foster	56,920
Pen fountain	G. R. Metten	58,732
Pen-handle tubes, Finishing the ends of	S. Wesson	54,455
Pen, Writing	S. Warrington	56,645
Pen rack, Spring	J. Adair	58,363
Pencil case	D. T. Warren	55,966
Pencil holder	L. B. Myers	56,251
Pencil holder	H. W. Holly	58,102
Pencil and pen holder	J. M. Clark	56,007
Pencil sharpener	J. MacMullen	51,845
Pencil sharpener and eraser, Combined	C. D. Smith	58,558
Pencil, Indelible	E. P. Clark	56,180
Pencils, Scale	B. Worcester	60,315
Pens	T. S. Hudson	53,622
Pens for weaning calves	J. B. Dow	53,589
Pens, Fountain	H. Madeheim	57,162
Pens, Manufacture of	G. Stimpson, jr	53,356
Percolator	P. H. Vanderweyde	53,905
Percolator, Continuous, and filtering machine	P. H. Vanderweyde	60,445
Pessaries	I. Stealy	55,733
Pessaries	H. H. Christie	59,556
Pessaries	E. B. Harding	59,999
Pessaries	J. P. Willms	60,312
Petroleum, Deodorizing	R. Newall	53,656
Petroleum, Distilling	A. Millochau	53,167
Petroleum, Distilling	L. V. Fitchet	53,964
Petroleum, Distilling	A. D. Higham	54,157
Petroleum, Distilling	W. H. Sangster and T. C. Spencer	56,276
Petroleum, Distilling	M. P. Ewing	56,852
Petroleum, Distilling	J. F. Collins	59,334
Petroleum, Double still for	P. H. Vanderweyde	58,512
Petroleum, &c., Distilling	M. P. Ewing and H. B. Everest	58,021
Petroleum, &c., Distilling	O. Lugo	58,113
Petroleum, Refining	H. C. Van Tine	60,290
Petroleum, Refining	W. H. Sangster	54,414
Petroleum, &c., Storing	E. Quinn	58,475
Petroleum, Treating	D. N. Burket and J. C. Gray	57,285
Petroleum, Vessel for	J. Brakeley	52,023
Petroleum, Vessels for, Packing	J. W. Masury	58,272
Petroleum and other liquids, Distilling	P. H. Vanderweyde	58,005
Petroleum and other liquids, Distilling	C. H. Hall	55,855
Petroleum and other substances, Distilling	O. Lugo	51,843
Petroleum oils and other substances, Distilling	O. Lugo and T. O. L. Schrader	60,396
Petroleum and heavy oils, Dryer for	S. F. Rogers	60,558
Petroleum, &c., Sulphuric acid used in refining, Recovery and purification of.	M. Barrett	59,531
Petroleum, naphtha, &c., Gas from, Generating and burning.	M. E. Hauson	57,502
Petroleum and water, Gases from, Producing and burning the.	A. J. Griffin	56,143
Photographic apparatus	N. Wright	52,239
Photographic apparatus	E. Muller	55,525
Photographic apparatus	C. A. Leech	55,682
Photographic baths	R. E. Sisson	55,590
Photographic pictures on ceramic ware, &c., Securing	J. B. Obernetter	52,503
Photographic pictures, Process and composition for printing	V. M. Griswold	53,815
Photographic printing frame	D. Shive	52,896
Photographic printing frame	C. L. Lochman	59,800
Photographic printing frames	J. W. Campbell	57,083
Photographic process	C.M.E. DuMotay and C.R. Maréchal	59,520
Photographic process for copying drawings, &c	W. Willis	55,592
Photographic rests	O. Sarony	55,443
Photographs, Drying	A. C. Platt	57,963
Photographs, Finishing, Roller for	W. J. Gordon	59,507
Photographs, Printing	W. B. Woodbury	52,803

Invention or Discovery.	Name of Patentee.	No.
Photographs, &c., Tinting	C. Elvecna	56,914
Photography	C. A. Guilmette	53,608
Photometers	S. G. Elliott	55,797
Piano-forte action	C. L. and A. B. Irving	59,155
Piano-forte action	W. V. Wallace	59,295
Piano-forte covers, &c., Ornamenting	J. F. Burgess	59,959
Piano-fortes	W. Steinway	55,385.
Piano-fortes	P. Schuler	58,896
Piano-fortes	W. H. Mason	58,950
Piano-fortes	G. C. Manner	59,619
Piano-fortes	G. H. Hulskamp	60,519
Piano-fortes, Augmenting sound in	M. Vergnes	57,225
Piano-fortes, Iron frames for	A. Ludolff	52,725
Piano-fortes, Repeating action for	J. Hurd	60,520
Piano, couch, and bureau, Combined	C. Hess	56,413
Pianos	C. Robbins	52,610
Pianos	R. Raven	57,186
Pianos	W. Nordhoff	57,257
Pianos	J. W. Otto	57,558
Pianos, Double action	J. J. Bender	57,434
Pianos, Metal frames for	M. Martins	57,743
Pianos, Sound boards for	J. Benz	58,763
Pianos, Sound boards to	P. Schuler	53,687
Pianos, Sounding boards for	A. De Kuhn	57,912
Pianos, Sounding boards for	F. E. Ramm	59,069
Pick and axe Combined	H. L. Lowman	58,438
Pickers for fibrous material	L. Ferguson	57,109
Picks, Mill	C. Crossley	52,688
Picture-frame clamps	J. A. H. Dunn	54,463
Picture frames	I. E. Rice	54,208
Picture frames	A. J. Holmes	59,719
Picture frames, Porcelain	C. L. Lochman	56,579
Picture holders	W. Walker	55,561
Pictures, Photographic on ceramic ware, &c., Securing	J. B. Obernetter	52,503
Pictures, Potographic, Process and compositions for printing	V. M. Griswold	53,815
Pictures to frames, Attaching	S. W. Hanks	59,836
Pie rimmer	J. Stephen and W. Zeller	57,990
Pile driver	J. J. Studers	59,476
Piles, Driving	J. McClay	55,586
Piles, Electric, Secondary	G. G. Percival	53,666
Piles, Protecting	W. J. L. Moulton	55,694
Piles, Hollow, Sinking	W. S. Smith	57,784
Pin machines, Wooden	N. W. Brewer	53,402
Pincers, Lasting	G. Kump	52,055
Pins, Feeding	C. L. Topliff	53,199
Pins, Hair crimping	E. A. Tyler	53,060
Pins, Paper	E. H. Boswell	54,676
Pins for attaching wearing apparel	R. J. Nunn	60,411
Pipe, Smoking	G. H. Chinnock	59,184
Pipes, Smoking	R. Norwood	56,997
Pipe, Tobacco	A. T. Dietz	51,812
Pipe, Tobacco	G. Lautenschlager and G. S. Gott	52,297
Pipe, Tobacco	R. Livingston	52,302
Pipe, Tobacco	P. Jeanne	52,419
Pipe, Tobacco	R. Masson	55,321
Pipe, Tobacco	E. Hoyt	56,752
Pipe, Tobacco	J. W. Petty	56,795
Pipe, Tobacco	A. F. Stayman	57,402
Pipe, Tobacco	M. M. Coppuck	58,072
Pipe, Tobacco	F. Tellgmann	60,282
Pipe, Tobacco, Stem for	C. Hingher	59,017
Pipe, Tobacco, and cigar holder	G. M. Ross and W. H. West	58,272
Pipe case, Tobacco	J. Spiers	60,078
Pipe joints, Gas	R. Wilson	59,702
Pipe joints and other similar articles, Forging	J. A. Shipton and R. Mitchell	58,963
Pipe, Steam, water, or other	E. H. Hill	54,346
Pipe, Ventilating for stoves and heaters	A. A. Wilder	58,159
Pipes, Blow	N. W. Kingsley	53,629
Pipes, Cement	H. Knight	60,014
Pipes, Gas, Cutting, Tool for	W. S. Howarth	52,715
Pipes, Gas, Preventing the freezing up of	J. H. Mulhall	57,172
Pipes, Gas, Safety attachment for	L. W. Turrell, S. Stanton, and L.C. Ward.	56,836
Pipes, Hose, Nozzle for	R. F. Moore	60,036
Pipes, Lead, Pressing	R. Laying	55,315
Pipes, Steam	G. A. Jasper	60,379
Pipes, Steam and boiler, Covering for	E. C. Little	56,856
Pipes, Stove, &c., Adjustable shelf for	S. V. Beckwith	58,711
Pipes, Stove, Connecting and supporting	S. Crowell	58,717
Pipes, boilers, &c., Non-conducting covering for steam	E. H. Ashcroft	59,338
Pipes and boards, Paper, Manufacture of	N. C. Szerelmey	54,082
Pipes for oil wells	J. H. Duck and E. R. Whitcomb	58,721
Pipes for oil wells, Driving	G. L. King	58,650
Pipes from wells, Drawing	T. Lowry	51,842

Invention or Discovery.	Name of Patentee.	No.
Pipes, Laying, and boring wells	D. B. Tiffany	56, 502
Pipes or tubes, Well	S. Brewer and W. W. Winter	56, 355
Pipes used in mash-tubs, Preventing coating of	A. Adams	57, 454
Pipes and bolts in oil wells, Securing	W. Parsons	52, 594
Pistol and pocket knife, Combined	A. J. Peavy	53, 473
Pistol and sword, Combined	A. Rauh	52, 504
Piston packing	T. J. Jones	52, 644
Piston packing	C. H. Clark	53, 949
Piston packing	A. S. Cameron	56, 699
Piston packing	A. W. Jackson	57, 916
Piston packing	W. A. and T. B. Powers	58, 176
Piston packing	J. Broughton	58, 766
Piston packing	W. G. Snook and O. C. Patchell	59, 143
Piston packing	E. T. Prindle	57, 375
Piston packing	F. J. Roth	60, 062
Piston packing	B. Lowe	60, 395
Piston-packing ring	J. B. Root	57, 189
Piston, Packing for	T. R. Grant	59, 907
Piston for steam engines	S. G. Cabell	56, 899
Piston heads for steam engines	E. Sullivan	55, 387
Piston-rod packing	G. S. Prindle	52, 742
Piston-rod packing	E. T. Prindle	53, 542
Piston-rod packing	F. Wright	56, 658
Piston-rod packing	R. Martin	57, 163
Piston-rod packing	C. P. Benoit	58, 204
Piston-rod packing	J. P. McLean and J. Vandercar	59, 918
Piston-rods, Packing for	W. P. Woodruff	57, 243
Piston-rods, Wooden, for deep wells	R. N. Allen	52, 355
Pistons	L. Huntoon	56, 420
Pistons, Pump	S. G. Mason	57, 531
Pistons, Pump	B. and E., and B. Pickering	57, 760
Pistons, Pump, Packing	M. N. Allen, J. Melcher and J. Rouse.	51, 999
Pistons, Pump, Packing for	J. Carter	54, 295
Pistons for deep-well pumps	E. Y. Kneeland	53, 630
Pistons for deep-well pumps	I. W. Hoagland	56, 414
Pistons for pumps	D. S. Wood	56, 314
Pistons for deep-well pumps	R. M. Allen	57, 840
Pistons for steam cylinders	M. B. Mason	57, 823
Pistons for steam engines	G. Bower and J. Qualter	57, 648
Pistons for steam engines, Packings for	J. F. Bogardus	57, 037
Pistons, syringes, caster wheels, bottle-stoppers, &c., Manufacture of.	R. B. Hugunin	53, 002
Pitcher	N. T. Whiting	57, 025
Pitcher, Beer	W. P. Eayrs	55, 076
Pitcher, Molasses	M. Robbins	56, 991
Pitman connections	M. L. Ballard	59, 310
Pitman, &c., Hanging	E. H. Craige	57, 292
Plane, Edge	S. Miller	58, 123
Plane, Edge, for boots and shoes	J. C. Grün	52, 845
Plane, Saw rabbet	D. D. Whitker	52, 478
Planes, Carpenters'	G. Müller	55, 207
Planes, Carpenters'	J. Woodville	59, 498
Planes, Core box	E. W. Lewis	60, 206
Planes, Mitre	J. Sawyer	60, 265
Planing machine	S. J. Talbott	54, 441
Planing machine	D. Niles	56, 254
Planing machine	J. Garfield	56, 548
Planing machine	O. Bridgeman	60, 332
Planing machine	W. B. McIver	53, 466
Planing machine	J. Dixon	54, 511
Planing machine	A. Fuller	55, 272
Planing machine	J. B. Tarr	55, 389
Planing machine	W. Sellers	55, 723
Planing machine	J. A. Woodbury	56, 656
Planing machine	J. J. Russ	57, 191
Planing machine	H. Climer and J. D. Riley	59, 966
Planing machines, Feed-rollers for	F. J. Plummer	59, 514
Planing machines for cutting slats for blinds	M. Free	55, 415
Planing machines, Wood, Cutters for	C. Livingston	56, 424
Planing and sawing machines, Dust and shaving conveyers for	D. R. Miller	58, 456
Planing or turning, Tools for	T. Cooper	56, 141
Planking clamps	J. C. Thomas	55, 554
Planter, Corn	M. C. Floyd	52, 281
Planter, Corn	A. J. Van Boekel	52, 471
Planter, Corn	E. M. Walker	54, 451
Planter, Corn	C. A. Wakefield	55, 399
Planter, Corn	J. F. Champlin	56, 667
Planter, Corn	C. C. Myers	58, 876
Planter, Corn	W. R. Baldwin	59, 543
Planter, Corn, Hand	R. L. Cleveland	57, 868
Planter, Corn, Single row	J. Clarridge	59, 998
Planter, Corn, and broadcast seeder, Combined	A. J. Edgett	58, 166
Planter, Corn and Hoe, Combined	J. A. Burchard	55, 612
Planter, Cotton	W. L. Gebby	60, 170

Invention or Discovery.	Name of Patentee.	No.
Planter, Cotton seed	F. H. Brown	55, 811
Planter, Cotton seed	J. L. Russell	56, 274
Planter, Hand	N. Safford	58, 486
Planter, Seed	J. H. Alexander	52, 635
Planter, Seed	I. W. McGaffey	56, 076
Planter, Seed	L. R. Wright	59, 115
Planter, Seed, Cotton	B. Owen	53, 377
Planter, Seed, Cotton	A. Packham	54, 942
Planter, Seed, Cotton	F. H. Brown	58, 372
Planter, Seed, Cotton	W. A. Horrall	59, 314
Planter, Seed, Cotton	N. E. Badgley	59, 339
Planter, Seed, Cotton	M. D. Wells	59, 490
Planter, Seed, Cotton	H. R. Fell and E. Phifer	59, 765
Planter, Seed, Hand	A. T. Large	60, 019
Planter, Seed, Hand	J. H. Latimer	60, 200
Planter, Seed, and roller combined	E. Perin	58, 284
Planter, Sugar cane	E. Cortes	60, 620
Planter and seeder	H. H. Webster	52, 500
Planters	W. F. Caldwell	58, 060
Planters, Corn	T. M. Hill	52, 413
Planters, Corn	H. B. Lansing	52, 861
Planters, Corn	D. and D. F. Luse	53, 459
Planters, Corn	A. Upson	54, 042
Planters, Corn	W. W. Hubbard	54, 166
Planters, Corn	J. D. Cochran	54, 507
Planters, Corn	M. Wilkinson	54, 633
Planters, Corn	J. Campbell	54, 642
Planters, Corn	W. H. Karicofe	55, 668
Planters, Corn	W. E. Rich	55, 908
Planters, Corn	W. Cogswell	56, 183
Planters, Corn	D. R. Warfield	56, 839
Planters, Corn	O. C. McCune	56, 969
Planters, Corn	H. Reed and W. P. Pennewell	57, 259
Planters, Corn	B. Clark	57, 676
Planters, Corn	A. Ladd	57, 734
Planters, Corn	A. Putnam	58, 135
Planters, Corn	S. P. Metz and M. Rohrer	58, 277
Planters, Corn	J. S. Rickel	58, 295
Planters, Corn	T. T. Shawcross	58, 557
Planters, Corn	E. R. Holford	58, 724
Planters, Corn	W. H. Cox	58, 988
Planters, Corn	J. Conrad	59, 559
Planters, Corn	R. M. Yorks	59, 703
Planters, Corn	W. R. Butler	59, 742
Planters, Corn	T. B. McConnaughey	60, 218
Planters, Corn	J. C. Walkinshaw	60, 447
Planters, Corn	I. Crum	60, 483
Planters, Corn	A. Windeck and A. Runstetler	60, 604
Planters, Corn, Hand	C. L. Green	51, 825
Planters, Corn, Hand	D. H. Howell	52, 171
Planters, Corn, Hand	S. E. Tyler and R. Tattershall	53, 752
Planters, Corn, Hand	R. Lambert	53, 838
Planters, Corn, Hand	O. Billings	54, 999
Planters, Corn, Hand	D. McKanna	55, 517
Planters, Corn, Hand	W. Gilbert	55, 850
Planters, Corn, Hand	D. Humphreys	56, 053
Planters, Corn and cane	J. M. Fate	58, 798
Planters, Corn and seed	J. L. Heisay	54, 901
Planters, Seed	R. Gillaspie	52, 989
Planters, Seed	R. Ketcham	53, 304
Planters, Seed	J. N. Lane	53, 635
Planters, Seed	C. P. Brown	58, 588
Planters, Seed, Cotton	N. B. Sherwood	55, 372
Planters, Seed, Cotton	N. B. Sherwood	55, 373
Planters, Potato	L. J. Holcomb	55, 657
Planting corn, Furrowing device for	J. Plumb	52, 598
Planting cotton seed, Machine for	I. W. McGaffey	56, 430
Planting cotton seed, Machine for	N. E. Badgley	58, 752
Planting, Marking ground for	P. McQuaid	56, 970
Planting machines	G. Ray	59, 071
Plants, Package case for	P. L. Suine	56, 290
Plants, Setting out, Implement for	E. W. Packer	53, 662
Plants, Transplanting	W. C. S. Ellerbe	58, 794
Plaster	M. C. Bogia and H. B. Taylor	56, 353
Plaster, Court, Preparation of	L. C. Gale	54, 326
Plaster, &c., Sowing	S. Wheelock	59, 300
Plaster, stone, and cement, Manufacture of	F. Ransome	55, 545
Plates for artificial teeth	G. H. Hurd	57, 725
Plates, Metallic, Corrugated	R. Montgomery	56, 779
Plates, Metal, Grinding	T. Handy	60, 181
Plates, Pressure, Hollow	J. B. Fontaine	59, 716
Plates, Sheet-iron, Treating	C. H. Perkins	52, 647
Plough, Corn	P. Barnhart	58, 973
Plough, Corn	R. C. Howard	59, 022

Invention or Discovery.	Name of Patentee.	No.
Plough, Cultivator	J. S. Gilmore	52,159
Plough, Cultivator	W. D. Nichols	57,952
Plough, Cultivator	W. O. Gibson	59,003
Plough, Double revolving	J. Mott	57,171
Plough, Furrowing	S. Perry	56,327
Plough beams, Metallic fastening for	L. Gibbs	53,918
Plough cleaning attachment	T. Terrell	57,216
Plough cleaner	O. F. Warren	56,296
Plough clevis	L. W. Alden	52,123
Plough clevis	G. P. Darrow	57,436
Plough coulter	J. Custer and C. Rowland	55,472
Plough coulter	S. Casebeer	57,286
Plough handles, forming	M. A. Ellis	56,736
Plough points	C. W. Saladee and T. Simpson	53,491
Ploughshares	P. K. Bronson	53,565
Plough and corn-planter, Combined	S. M. Swartz	57,994
Plough and scraper, Combined	R. Elliot	51,817
Plough, Gang	A. P. Durant	52,401
Plough, Gang, and cultivator	W. W. St. John	60,589
Plough, Gang, and wheel cultivator	W. Hammond	55,093
Plough, Mole	A. Miller	59,049
Plough, Shovel, Double	J. Clarridge	58,597
Plough, Snow, Railroad	J. C. Carncross	52,028
Plough, Sulky	P. Young	56,662
Plough, Sulky	G. Knight	59,232
Plough, Sulky, and harrow	J. E. Cheasebro	58,773
Plough for cutting bogs	J. Coffey	59,557
Ploughs	O. F. Burton and L. B. Hoit	51,917
Ploughs	J. Fowler	52,407
Ploughs	T. Cottman	52,539
Ploughs	J. Widman and F. Millica	52,633
Ploughs	T. J. Cornell	52,807
Ploughs	T. A. Stansbury	52,963
Ploughs	R. L. Allen	52,948
Ploughs	W. J. M. Batchelder and C. Leiber	53,100
Ploughs	A. T. Boon	53,559
Ploughs	J. S. Beals	53,773
Ploughs	S. F. Seely	53,891
Ploughs	L. M. Bates	54,095
Ploughs	J. Mott	54,756
Ploughs	L. B. Dennett	55,069
Ploughs	T. Gilson and N. Martin	55,279
Ploughs	M. Kennedy	55,312
Ploughs	C. M. Lufkin	55,684
Ploughs	S. Beckett	55,984
Ploughs	T. E. C. Brinkley	55,999
Ploughs	G. Watt	56,298
Ploughs	C. Beidler	56,350
Ploughs	H. A. Martin	56,584
Ploughs	J. B. Skinner	57,200
Ploughs	B. Price	56,798
Ploughs	D. Jacoby	57,147
Ploughs	Z. W. Lee	57,341
Ploughs	H. A. Hummer	57,724
Ploughs	J. McKinley	57,748
Ploughs	G. W. Thompson	57,796
Ploughs	C. B. Hunting	57,909
Ploughs	T. Rams	57,968
Ploughs	A. W. Stoker	57,991
Ploughs	F. M. McMeekin	58,119
Ploughs	J. A. Quick	58,177
Ploughs	R. B. Summers and S. Dement	58,318
Ploughs	W. Veber, jr	58,323
Ploughs	J. B. Edgell, J. W. and E. A. Alexander	58,395
Ploughs	I. Kennedy	58,431
Ploughs	C. Steen	58,500
Ploughs	C Zimmerman	58,534
Ploughs	J. S. Marsh	58,855
Ploughs	C. St. John	58,911
Ploughs	J. Harris	59,010
Ploughs	J. L. Robarts	59,078
Ploughs	J. Price	59,262
Ploughs	J. A. Moore	59,437
Ploughs	M. T. Smith	59,468
Ploughs	B. Volkmann	60,095
Ploughs	J. N. Pond	59,515
Ploughs	J. Fogelgesang	59,577
Ploughs	C. Glidden	60,172
Ploughs	I. W. Bartlett	60,461
Ploughs, Carriage	A. Ingalls	55,108
Ploughs, Corn	D. Wilde	54,810
Ploughs, Cultivator	L. Strickland	52,222
Ploughs, Cultivator	T. H. Miner and S. Heavenridge	53,322
Ploughs, Cultivator	W. Stillman	57,067

Invention or Discovery.	Name of Patentee.	No.
Ploughs, Gang	H. C. Smith	51, 875
Ploughs, Gang	R. R. Gaskill	52, 558
Ploughs, Gang	J. E. Travis	52, 651
Ploughs, Gang	A. L. and B. F. Gilliland	52, 990
Ploughs, Gang	L. M. Patterson	53, 328
Ploughs, Gang	J. H. Eckert	53, 424
Ploughs, Gang	A. Hammond	53, 443
Ploughs, Gang	J. B. Skinner	54, 029
Ploughs, Gang	C. Atwood	54, 089
Ploughs, Gang	W. M. Watson	54, 453
Ploughs, Gang	T. J. Cornell	54, 693
Ploughs, Gang	J. L. Runk, J. H. Brown, and E. M. Morgan.	54, 963
Ploughs, Gang	J. B. Hunter	55, 660
Ploughs, Gang	J. D. Smith	55, 921
Ploughs, Gang	W. T. Rogers	56, 613
Ploughs, Gang	W. Battell	56, 878
Ploughs, Gang	S. Hutchinson	56, 942
Ploughs, Gang	A. H. Burlingame	57, 081
Ploughs, Gang	J. W. Donaldson, D. Sheets, and A. C. Miller.	57, 688
Ploughs, Gang	T. J. Cornell	58, 384
Ploughs, Gang	H. N. Dalton	58, 386
Ploughs, Gang	F. S. Davenport	58, 612
Ploughs, Gang	D. Bequeret and E. Dumouliu	59, 813
Ploughs, Gang	P. Merkel	59, 855
Ploughs, Gang, and sub-soil ploughs	R. L. Dodge and E. M. Walker	58, 788
Ploughs, Garden	J. M. Crawford	57, 871
Ploughs, Garden, Hand	J. Von Achen	53, 061
Ploughs, Railroad	C. Medbury and T. Wyatt	51, 850
Ploughs, Rotary	D. Myers	52, 496
Ploughs, Rotary	L. H. Colborn	53, 577
Ploughs, Shovel	P. Dennis	55. 630
Ploughs, Shovel	W. H. Luce	58, 112
Ploughs, Shovel	J. C. Boyd	58, 581
Ploughs, Shovel	J. C. Daugherty	59, 191
Ploughs, Snow	R. B. Nevens	58, 124
Ploughs, Snow, Railway	C. L. Haywood	51, 829
Ploughs, Steam	G. Simonson	54, 224
Ploughs, Steam	J. Fowler, jr., W. Worby, and D. Greig.	57, 652
Ploughs, Steam	R. Fowler, jr., and R. W. Eddison	57, 653
Ploughs, Steam	O. Redmond	59, 073
Ploughs, Sulky	T. Wolfe	52, 104
Ploughs, Sulky	S. M. Lockwood	53, 457
Ploughs, Sulky	S. Stout	57, 992
Ploughs, Sulky	R. R. Gaskill	57, 889
Ploughs, Sulky	A. Hale	59, 390
Ploughs, Sulky	J. J. Reed	59, 654
Ploughs, Wheel	O. P. Dills	57, 878
Ploughs, Attachment in	M. Roberts	53, 749
Ploughs, Mouldboard for	L. P. Rider	59, 267
Ploughs, Mouldboards for	G. A. Beard	57, 463
Plugging instruments, Dental	G. B. Snow and T. G. Lewis	59, 784
Plugging instruments, Dental	G. B. Snow and T. G. Lewis	59, 284
Pocket book	W. T. Fry	52, 702
Pocket book protector	A. Drummond	55, 838
Pocket tablet	J. A. Minor	56, 776
Pocket, Pencil	T. D. Miller	53, 166
Pockets, Safety	W. Hindhaugh	56, 049
Pockets, Safety	C. H. Bagley	56, 139
Pockets, Safety	G. A. Mitchell	56, 248
Pockets, Safety	P. A. Stecher	56, 821
Pockets, Safety	J. A. Bell	57, 072
Pockets, Safety	J. T. Chambers	58, 062
Pockets, Safety	A. T. Large	59, 415
Pockets, Safety attachment for	J. Metzendorf	58. 120
Pockets, Seamless	G. Göttgen	58, 035
Pockets, Watch, Safety	W. W. Covell, jr	56, 014
Pockets, Watch, Safety	T. W. Terry	57, 645
P ker and tongs	J. Blair	59, 547
Poker and tongs, Combined	S. D. Yerks	57, 431
Poker, tongs, wrench, &c., Combined	J. Richards	60, 556
Pole and post puller	I. Holmes	57, 905
Pole for horse railway cars	D. T. Robinson	60, 250
Polishing and grinding	N. A. Buhle	56, 896
Polishing machine, Heel	S. D. Tripp	52, 470
Polishing machine, Heel	J. M. Thompson and S. D. Tripp	52, 498
Polishing machine, Heel	J. M. Thompson and S. D. Tripp	52, 499
Porcelain picture frames	C. L. Lochman	56, 579
Pork, Curing, mode of	M. H. Smith	57, 203
Portfolio	L. Heyl	53, 299
Post driver	D. D. Foley	59, 990
Post and pole puller	I. Holmes	57, 905

Invention or Discovery.	Name of Patentee.	No.
Posts, Fence	W. Hunter	59,023
Posts, Fence, Driving	G. E. West	57,231
Posts, Fence, Setting	H. W. Clarke	58,776
Posts, Hitching	V. Ward	55,445
Posts, Telegraph	W. J. Fryer, jr	54,712
Pot, Chamber	A. Rankin	52,320
Pot, Coffee	J. C. Gove	53,139
Pot, Coffee	W. Edson	58,396
Pot, Tea	R. Carter	56,367
Pot, pan lifter and stove cover	J. B. Oakey	59,058
Pot and pearlash, Manufacture of	B. F. Jewett	57,728
Potash, bicarbonate of soda and hydrochloric acid	H. M. Baker	57,458
Potato diggers	A. Marcellus	52,428
Potato diggers	W. D. Miller	55,337
Potato diggers	W. F. Caldwell	56,366
Potato diggers	C. B. Cannon	60,618
Potato diggers	M. T. Drake	60,347
Potato diggers	A. Dolloff	52,830
Potato diggers	E. G. Ford and J. F. Penquite	52,984
Potato diggers	L. F. Schanck	53,349
Potato diggers	D. J. Tittle	53,363
Potato diggers	F. A. Morley	55,206
Potato diggers	S. Soules	55,384
Potato diggers	G. Ray	57,568
Potato diggers	W. H. Burridge	58,334
Potato diggers	A. Walker	58,560
Potato diggers	J. P. Smith	60,273
Potato diggers	A. Gilmore	60,501
Potato masher	A. L. Whitney	54,987
Potato masher	V. Fountaine, jr	60,355
Potato washer	J. H. Williams	56,652
Potato and drill machine	S. L. Spencer	57,207
Potatoes, Coal, &c., Assorting	M. D. Dickinson	58,229
Potatoes, Digging, Machine for	H. M. Peavey	56,260
Potatoes, Treating, to prevent potato rot	A. Mallett	53,159
Pots, Coffee	W. Westlake	58,518
Pots, Coffee	J. H. Lee	60,204
Pots, Flower, Support for	T. Prince	52,200
Pots, Tea and coffee	L. A. Plumb	57,372
Pots, Tea and coffee	P. G. H. Schaefer	55,720
Pots, Meter, Saline	G. Sewell	54,073
Pottery ware, Making	H. R. Bodine	52,261
Pouches, Shot and cartridge	H. Hammond	54,147
Powder, Bronze	L. Brandeis	53,563
Powder, Core, Composition for	W. B. Lupton	53,460
Powder-flask charger	C. C. Dickey	52,147
Powdered substances, Sprinkler for	J. M. Keep	59,406
Power, Horse	G. W. Sauor and J. Stoffer	52,753
Power, Horse	S. W. Davis	52,975
Power, Horse	J. M. Randle	53,378
Power, Horse	G. Partridge and D. M. Johnson	53,664
Power, Horse	N. Starr, jr	54,433
Power, Horse	J. B. Sweetland	57,995
Power, Manual	J. H. Yager	59,117
Power, Motive	J. H. Haven	52,287
Power, Motive	J. A. Schule	54,220
Power, Motive	J. McKnight and W. S. Deisher	55,325
Power, Motive, Obtaining	R. W. Thomson	55,030
Power, Motive, Transmitting	T. Hanson	55,289
Power, Motive, Transmitting	R. T. Smith	59,089
Power, Transmitting	J. Woolf	53,914
Power, Transmitting by means of railroad cars operating upon rail.	C. Foster	57,112
Preservative material, Impregnating substances with	E. Sabathé and L. Jourdan	58,036
Preservatory	A. Smith	52,650
Press	G. Mathewman	52,584
Press	W. Norman	53,657
Press	J. A. McGillirae	56,588
Press, Baling	C. H. Thatford	52,911
Press, Baling	J. B. Gridley	53,917
Press, Baling	D. Frisbie and S. C. Goodsell	54,644
Press, Baling	L. Seeberger and N. Levy	56,456
Press, Baling	C. C. Converse	58,222
Press, Baling	J. A. Williams	58,526
Press, Baling	H. A. Ashley	59,309
Press, Baling	C. W. Gillis	59,832
Press, Baling	W. R. King	60,196
Press, Baling	G. D. Howe	60,376
Press, Beater	S. R. Dummer	52,275
Press, Brick	W. Barker and G. Martin	54,460
Press, Brick	D. W. Seeley	54,967
Press, Brick-drying	J. F. Shryock	55,376
Press, Cheese	W. H. Stevens	59,475
Press, Cheese	W. Thomas and W. Rhoades	60,438

Invention or Discovery.	Name of Patentee.	No.
Press, Cider and wine	C. Beach	57, 277
Press, Cigar	A. Iske	56, 055
Press, Cigar	J. Campbell	58, 538
Press, Cigar	M. Leippe	56, 578
Press, Cigar	G. Heiss	59, 911
Press, Clay and peat	B. Van Vranken	55, 748
Press, Copying	I. D. Spaulding and D. N. B. Coffin, jr.	52, 086
Press, Cotton	T. E. McNeill	59, 853
Press, Cotton and hay	S. C. Goodsell and D. Frisbie	58, 341
Press, Cotton or hay	J. S. Allums	60, 457
Press, Drop	J. P. Noyes	58, 880
Press, Embossing	J. H. Merriam and W. N. Weeden	56, 244
Press, Filter	L. P. R. De Massey	57, 265
Press, Foot	N. C. Stiles	53, 499
Press, Foot	J. N. Smith	59, 669
Press, Fruit	D. T. Robinson	60, 060
Press, Fruit, and cider mill	L. A. Warner	58, 514
Press, Glass	H. Dillaway	57, 296
Press, Glass, Cooling	H. I. Leasure and J. S. Gill	60, 203
Press, Gluing	M. H. Merriam and E. L. Norton	55, 334
Press, Hand, Rack motion for	C. Wells	60, 301
Press, Hat-finishing	W. Walsh, W. Walsh, jr., and M. J. Walsh.	58, 513
Press, Hay	B. Roberts	54, 209
Press, Hay	E. A. Ward	57, 227
Press, Hay	I. H. Johnson	57, 331
Press, Hay and cotton	J. N. Smith	52, 084
Press, Hay and cotton	M. D. Moore	52, 495
Press, Hay and cotton	E. M. Day and J. T. Noel	52, 786
Press, Hay and cotton	T. D. and F. R. Read, and C. Dorrel	54, 956
Press, Hydraulic, for peat, brick, &c	A. H. Emerson	57, 303
Press, Hydraulic, to prevent corrosion	T. P. Shaffner	60, 570
Press, Lithographic, Bed for	J. Koehler	53, 309
Press, Mangle or rolling	A. Hermann	54, 543
Press, Power, Clutch for	N. C. Stiles	52, 335
Press, Power or beater, Operating	C. Nelson	55, 779
Press, Printing	M. G. Imbach	54, 357
Press, Printing	A. Campbell	56, 701
Press, Printing	A. Dougherty	57, 486
Press, Printing, Railroad ticket	W. H. Forbush	59, 533
Press, Printing	G P. Gordon	60, 504
Press, Printing, Paper gauge for	J. W. Thyng	56, 123
Press, Printing, Bed-recoil springs for	A. Campbell	56, 700
Press, Printing, Registering apparatus for	J. Kirk	55, 774
Press, Screw, Revolving	R. M. Brooks	59, 352
Press, Stamp-cancelling	F. Hovey	56, 498
Press, Tobacco	J. W. Barber	55, 759
Press, Tobacco	W. H. Watson	55, 937
Press, Tobacco	J. M. Talbott	59, 478
Press, Tobacco	W. T. Watson	60, 298
Press, Wine	A. L. Rand	52, 202
Press, Wine	J. Robertson	52, 208
Press, Wool	H. H. Brown	54, 103
Press, Wool	P. B. Killim	55, 116
Press, Wool	S. Cooley	58, 779
Press, Wool	O. C. McCune	58, 860
Press plates	A. Smith	52, 899
Press for cider mills	M. Stevens	56, 824
Press for the manufacture of sugar	P. M. Gilbert	56, 205
Press for striking up metal	J. North	51, 960
Press and cutter, Tobacco	S. G. Rice	59, 748
Press and strainer for cream paste, &c	L. Bishop	52, 661
Presses, Printing	G. J. Hill and S. Greene	57, 634
Presses, Upsetting	A. Kloman	55, 674
Presses, punches, &c., Adjustable pitmen for	N. C. Stiles	56, 631
Pressing and moulding pliable materials	G. C. Howard	55, 658
Pressure plate, Hollow	J. B. Fontaine	59, 716
Printers' chase	A. M. Blanchard	52, 662
Printers' galley	J. Snyder	51, 877
Printers' galley	A. T. De Puy	60, 151
Printers' rollers, Composition for	L. K. Bingham	57, 849
Printers' inking rollers, Composition for	W. Harvey	59, 597
Printing frame, Photographic	D. Shive	52, 896
Printing frame, Photographic	C. L. Lochman	59, 800
Printing frames, Photographic	J. W. Campbell	57, 083
Printing and dyeing textile fabrics and yarns	A. Paraf	60, 546
Printing and writing, Machine for	A. Peeler	57, 182
Printing on bottles	I. L. Miles	56, 593
Printing on glass, porcelain, &c	E. C. Jayne	52, 418
Printing textile fabrics	J. Green	56, 208
Printing, Power, Preparing stone for	N. M. Buffington	54, 499
Printing, Typographic	J. Donlevey	53, 587
Privies	D. S. Forney	58, 400
Privy-seat covers	W. Beach	56, 881

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Privy bowls, Flanges for, Detachable	R. Diven	60, 153
Projectiles	S. H. Haycock	55, 796
Projectiles, Compound	J. E. Crane and J. Fox	57, 870
Projectiles for ordnance	J. M. Currie	58, 783
Projectiles for rifled ordnance, Packing	L. W. Broadwell	55, 761
Projectiles for rifled ordnance, Packing	J. W. Cochran	56, 712
Propeller	J. T. Martin	51, 955
Propeller	G. Meader	52, 308
Propeller	J. F. Allen	54, 481
Propeller	A. A. Wilder and W. Gooding	54, 801
Propeller	W. L. and T. Winans	58, 744
Propeller for canal boats	E. Raynall	57, 569
Propeller for steamships	C. Kinkel and M. Hubbe	55, 773
Propeller for steamships	A. Doyle	57, 690
Propeller for spindle-shaped ships	W. L. and T. Winans	57, 836
Propeller for vessels	A. Raphin	53, 762
Propeller, Steam, for boats	A. W. Von Schmidt	59, 686
Propeller, Hand, for small boats	J. Fehrenbatch	58, 083
Propeller, Screw	W. E. Davis	56, 907
Propeller, Wheel	T. Tripp	53, 902
Propeller and steerer for boats, Portable	T. Reece	59, 074
Propelling horse	J. H. Brown	60, 335
Props to carriage bows, Attaching	L. Sawyer	54, 782
Propulsion, Wave-power	C. W. Cahoon	54, 107
Propulsion, Canal, Device for	G. Stackpole	53, 088
Pruning instrument	R. Collier	55, 623
Pruning instrument	J. Evans and R. H. Seymour	57, 817
Pruning instruments	G. F. Waters	58, 326
Pulley attachment for raising weights	G. W. Gregory	57, 125
Pulley suspension hook	D. B. Baker and P. S. Miller	59, 542
Pulley, Clamp	R. Chandler	53, 730
Pulley, Friction	C. B. Smith	60, 269
Pulley, Self-adjusting, for fishing boats	W. Woodbury	52, 634
Pulley, Self-stopping	T. C. Richards	53, 341
Pulleys	A. S. Blake	59, 172
Pulleys	R. W. Parker	59, 256
Pulleys	J. S. Tibbits	59, 874
Pulleys, Casting, Moulds for	W. D. Rinehart	55, 713
Pulleys, Chain, Cast-iron	J. Bird	60, 329
Pulleys, Construction of	A. Warth	53, 711
Pulleys, Friction	L. G. Mason	57, 352
Pulleys, Friction clutch	G. W. Bishop	58, 765
Pump	A. N. Parkhurst	52, 070
Pump pistons	D. S. Wood	56, 314
Pump. Air compressing	J. N. Denni-son	59, 124
Pump, Cattle	J. S. Patric	55, 356
Pump, Centrifugal	E. H. Covell	60, 145
Pump, Draining	W. S. Nelson	51, 854
Pump, Driving	S. H. Rhoades	58, 479
Pump, Force	E. B. Harris	56, 556
Pump sprinkler	W. F. Clau	54, 685
Pump and fire engines	J. N. Dennisson	54, 247
Pump and boring apparatus for oil wells	J. B. Root	58, 299
Pumps	F. S. Pease	51, 965
Pumps	S. Vance	52, 346
Pumps	T. Mayhew	52, 364
Pumps	W. A. Barnes	52, 377
Pumps	S. G. Mason and C. R. Gill	52, 431
Pumps	K. Reed	52, 446
Pumps	L. Beemer	52, 485
Pumps	J. Bean	52, 660
Pumps	H. A. M. Harris	52, 709
Pumps	L. A. Gould	52, 991
Pumps	J. Johnson and C. W. Singer	53, 007
Pumps	A. Rewerich	53, 185
Pumps	J. Michel	53, 467
Pumps	H. M. Stoker	53, 750
Pumps	J. Goodyear	53, 810
Pumps	R. Cochran	55, 821
Pumps	A. Leuchtweiss	53, 939
Pumps	A. Burr	54, 289
Pumps	A. S. Cameron	54, 291
Pumps	J. S. Patric	54, 399
Pumps	J. W. Sheaffer	54, 420
Pumps	R. H. Andrews	54, 483
Pumps	D. S. Wood	54, 636
Pumps	T. Hausbrow	54, 719
Pumps	N. T. Fogg	54, 881
Pumps	E. L. Staples	55, 022
Pumps	J. M. Roebuck and W. R. Reese	56, 101
Pumps	R. Hartley	56, 218
Pumps	S. S. Durbon	56, 387
Pumps	F. W. Tully and T. Reece	56, 468
Pumps	D. M. Thomas	56, 637

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Pumps	J. W. Douglas	56, 671
Pumps	M. J. Althouse	56, 871
Pumps	J. P. Gruber	57, 499
Pumps	N. Johnson	57, 516
Pumps	R. E. Strait	57, 595
Pumps	E. B. Juckett	57, 635
Pumps	A. S. Hanson	57, 897
Pumps	A. F. Fletcher	58, 085
Pumps	L. Drescher	58, 360
Pumps	A. F. Fletcher	58, 801
Pumps	A. B. Barlow	58, 972
Pumps	D. L. Jaques	59, 030
Pumps	J. N Dennisson	59, 125
Pumps	A. Conant and I. F. Brown	59, 364
Pumps	M. J. Althouse	59, 536
Pumps	J. W. Cahill	59, 708
Pumps	W. P. Squire	59, 869
Pumps	O. Miller	60, 535
Pumps	E. B. Winship	60, 605
Pumps, Air-compressing	B. Holly	55, 905
Pumps, Attachment to	T. J. Jones	58, 170
Pumps, Bellows	J. M. Wallis and E. P. Swearingen	60, 098
Pumps, Cattle	J. B. Atwater	52, 011
Pumps, Force	W. G. Crutchfield	60, 146
Pumps, Force, Turbinate	J. H. A. Gericke	55, 082
Pumps, Oscillating	J. E. Hallett	53, 373
Pumps, Pneumatic	H. Gottfried	54, 328
Pumps, Rai road station	A. W. Todd	56, 467
Pumps, Reciprocating	D. M. Weston	56, 129
Pumps, Rotary	W. and R. Foster	51, 936
Pumps, Rotary	H. B. Leach	54, 565
Pumps, Rotary	J. J. Morris	54, 581
Pumps, Rotary	H. Maas	55, 318
Pumps, Rotary	R. Defrees	56, 850
Pumps, Sand	J. B. Kibler	54, 739
Pumps, Sand	R. Cornelius	54, 867
Pumps, Sand	C. Mather	57, 830
Pumps, Sand	B. Morahan	58, 457
Pumps, Sand	J. Benson	58, 579
Pumps, Steam	J. C. Morgan	53, 170
Pumps, Steam	L. C. Rodier	57, 188
Pumps, Steam	J. Jordon	59, 400
Pumps, Steam	L. Carricaburu	59, 519
Pumps, Steam jet	C. Barnes	57, 035
Pumps for deep wells	J. Bloom	52, 019
Pumps for deep wells	R. Cornelius	53, 117
Pumps for deep wells	S. H. Early	53, 128
Pumps for deep wells	R. Cornelius	54, 300
Pumps for deep wells	F. Armstrong	54, 484
Pumps for deep wells	J. H. Davis	55, 626
Pumps for deep wells	R. Cornelius	55, 822
Pumps for deep wells	B. Crawford	56, 380
Pumps for deep wells	W. E. Morrison and W. L. Betts	56, 435
Pumps for deep wells	A. Carver	57, 086
Pumps for deep wells	W. B. Snow	60, 586
Pumps for oil wells	W. Wilkinson	52, 947
Pumps for railroad stations	H. S. Lansdell	52, 721
Pumps, Pistons for deep wells	J. W. Hoagland	56, 414
Pumps, Pistons for deep wells	E. Y. Kneeland	53, 630
Pumps, Siphon and force, Pressure heads for	D. M. Shapley	54, 615
Pumps, Steam, for railroad stations	W. H. Butler	53, 269
Pumps, Measuring	S. H. Wheeler	55, 433
Pumps, Packing for	C. Hood	51, 831
Pumps, Valves for	H. P. M. Birkinbine	53, 396
Pumps, Ships', Working	L. Simkins	55, 377
Pumps, Well, Deep	J. Harrison	53, 974
Pumps, Well, Deep	J. W. Summers	58, 150
Pumps and engines, Rotary	D. D. Hardy	60, 365
Pumps and engines, Rotary	D. D. Hardy	60, 366
Pumps, &c., Communicating reciprocating motion to	I. Van Olinda	58, 918
Punch	C. B. Holden	57, 136
Punch	W. A. Rex	59, 453
Punch, Hand	A. L. Eckert	53, 282
Punch, Spring	J. Lyle	53, 537
Punch mixer and egg beater	T. Fisler	53, 965
Punch for horseshoes	C. Huie	58, 645
Punching, Apparatus for	J. F. Allen	52, 810
Punching machine	G. A. Alger	54, 997
Punching machines, Rods of	J. V. C. Crate	59, 823
Punching, shearing, and forging device	J. E. Emerson	55, 263
Punching sheets of metal	J. M. Riter and L. J. Farquhar	58, 676
Punches, Gang	J. H. Keating	59, 230
Punches, Hand, Shears, &c., Operating	W. B. Mason	56, 772
Punches, Presses, &c., Adjustable pitmen for	N. C. Stiles	56, 631

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Pulp, Fibrous substances to, Reduction of	H. B. Meech	56,971
Pulp, Manufacture of	H. B. Meech	54,932
Purifier and water cooler	J. M. Baird	55,037
Putty, Composition for	J. and W. Lucas	57,528
Q.		
Quartz comminutor	O. G. Warren	54,045
Quartz crusher, Ore	J. Fowler	58,089
Quartz crushing	D. Hughes	52,716
Quartz crushers	C. W. Stafford	52,765
Quartz crushers	J. Fleck	52,837
Quartz crushers	J. M. May	53,319
Quartz crushers	S. F. Ambler	53,552
Quartz crushers	M. B. Dodge	54,512
Quartz crushers	T. Shaw	56,108
Quartz crushers	S. B. Pike	56,150
Quartz crushers	J. Mabbs	56,581
Quartz crushers	A. Lindsay	56,768
Quartz crushers	H. Pearce	56,793
Quartz crushers	I. S. Croll	58,539
Quartz crushers	E. P. McCarthy	58,116
Quartz crushers	M. L. Battell	59,165
Quartz, Desulphurizing	T. D. Warrall	57,430
Quartz, Pulverizing	H. A. Breed	54,497
Quilting frames	W. Fredcrick	56,202
R.		
Rack, brush, and fan	B. Poulson	60,554
Rack, Card	E. Safford	57,776
Rack, Card	J. M. Keep	58,428
Rack, Clothes	J. O. Montignani	59,133
Rack, Cow and sheep	R. Lovett	54,745
Rack, Feed and stack bottom, Combined	F. F. Fowler	57,115
Rack, Hat, and seat	E. S. Blake	57,076
Rack, Hay	D. N. Webster	58,158
Rack, Hay, for wagons	A. Jackson	54,914
Rack, Hay, for wagons	A. Naramor	58,280
Rack, Hay, for wagons	G. Y. Smith	60,271
Rack, Hay, for wagons	F. M. Evringham	60,161
Rack, Knife or fork	J. B. Hawley	54,541
Rack, Milk	A. Jackson	56,056
Rack, Pen, and bill holder	C. P. Crossman	58,716
Rack, Pen, Spring	J. Adair	58,363
Rack, Sheep	J. Romans	53,346
Rack, Sheep	E. and D. Skeels	57,985
Rack, Sheep	B. D. Tabor	60,651
Rack, Sheep-feeding	M. S. Every	56,024
Rack, Sheep and cattle	J. B. Brown	57,853
Rack, Sheep, and holder	E. Page	55,896
Rack, Sheep, and shed, Combined	D. Porter	57,965
Rack and shed, Sheep, Combined	T. P. Sibley	57,983
Rack, Whip	E. Richmond	58,480
Rack and stove shelf	J. Guilliford	53,441
Rack for hauling wood	A. Landis	58,108
Racks, Hat	C. H. Keener	56,569
Racks, Hay	W. E. Grimes	53,814
Racks, Feed, Portable	C. W. Lamb	53,634
Racks, Hay, Feeding	T. Moore	54,005
Racks, Hay, for wagons	D. Dennett	55,829
Racks, Milk and cheese	J. G. Cross	56,722
Racks, Sheep	H. Steevers	51,869
Racks, Sheep	D. L. Pettigrew	52,198
Racks, Sheep	G. F. and T. M. Goudy	53,811
Racks, Sheep	F. Foreacre	54,138
Racks, Sheep	G. W. Boynton	54,285
Racks, Sheep	S. Lahm	54,371
Racks, Sheep	L. Hall	55,090
Racks, Sheep	D. F. Sexton	55,370
Racks, Sheep	A. A. Webster	56,300
Racks, Sheep	M. C. Clark	58,065
Racks, Sheep	J. D. Woodbury	58,529
Racks, Sheep	H. H. Ladd	59,236
Radiator, Steam	H. Howard	58,258
Radiators, Steam	T. B. Belfield	58,202
Raft, Life	J. Murtaugh	60,640
Raft, Life	L. F. Frazee	56,201
Rafting pin	T. B. Raymond	59,072
Rail, Railroad	D. C. Pierce	53,479
Rail, Railroad	P. F. Jones	59,401
Rail for railroads	J. S. Butterfield and M. S. Green	54,853
Rail, Railroad, Wedge	W. M. Martin	57,530
Rails, Railroad	Z. Street	53,701

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Rails, Railroad	J. W. Shiveley	56,279
Rails, Railroad	R. V. Jones	56,760
Rails, Railroad	J. L. Booth	57,467
Rails, Railroad	J. Adams	60,112
Rails, Railroad, Fastening for	E. B. Graff	54,498
Rails, Railroad, Three-headed, Rolls for the manufacture of	J. Gower	54,329
Rails, Railroad, Uniting iron and steel for the manufacture of	W. Batty	57,039
Rails, Railroad, Welding	H. Baines	52,502
Railroad bars, Joints for	S. M. Longley	58,849
Railroad sweeper	E. A. F. Olmstead	56,256
Railroad track	H. Baines	53,240
Railroad tracks, Shooting gravel at cows upon	S. Scotton	54,783
Railroad turnouts	R. Harper	52,361
Railroads	C. T. Harvey	56,411
Railroads, Aerial	R. Montgomery	57,949
Railroads, Portable	J. N. Peteler	57,826
Railroads, Turnouts for	S. A. Otis	60,044
Railway crossing	J. L. Shaw	57,779
Railway frog	E. G. Allen	54,086
Railway frog	A. Robbins	56,271
Railway frogs	E. G. Allen	58,196
Railway track clearer	J. A. Matthews	53,317
Railway track clearer	M. J. Goodwin	58,634
Railways	Z. Eastman	58,621
Railways	S. Winkley	59,112
Railways, Construction of	W. Peet and M. S. Hyde	51,904
Railways, Construction of	S. Winkley	58,565
Railways, Station indicators for	E. B. Van Winkle	59,685
Rain water cut-off	L. W. Doty	55,072
Raisin seeder	J. B. Crosby	56,721
Raisins, Seeding	S. C. Moore	53,855
Rake attachment to harvesters	E. Smith	55,380
Rake, Garden	M. G. Baker	57,066
Rake teeth, Horse	C. Coleman	52,680
Rake teeth, Horse	A. B. Sprout	54,430
Rake and spade, Combined	W. H. Miller	59,050
Rakes, Harvester	N. A. Dederer	52,396
Rakes, Harvester	E. T. Ford	52,700
Rakes, Harvester	S. and J. Sherman	53,051
Rakes, Harvester	W. F. Goodwin	53,136
Rakes, Harvester	J. Mumma	53,171
Rakes, Harvester	J. H. Jones	53,450
Rakes, Harvester	C. Moul	53,653
Rakes, Harvester	J. D. Loveland	53,740
Rakes, Harvester	T. Taylor	53,929
Rakes, Harvester	J. Barnes	53,942
Rakes, Harvester	W. P. Dillman	53,958
Rakes, Harvester	C. L. Carter	54,294
Rakes, Harvester	H. Clymo	54,298
Rakes, Harvester	G. Wellhouse	54,235
Rakes, Harvester	A. R. Reese	54,406
Rakes, Harvester	A. D. Sprague and A. Dockhum	54,789
Rakes, Harvester	C. L. Davis	54,871
Rakes, Harvester	W. J. and R. Case	55,059
Rakes, Harvester	P. C. Chipman	55,060
Rakes, Harvester	W. F. Goodwin	55,487
Rakes, Harvester	E. J. Leyburn	55,877
Rakes, Harvester	R. D. Brown	56,521
Rakes, Harvester	J. O. Brown, A. Ingham, and F. T. Lomont.	56,696
Rakes, Harvester	S. K. Lighter	60,392
Rakes, Hay	H. Brown	56,000
Rakes, Hay	E. R. Hall	57,706
Rakes, Hay	R. G. Lamson	58,841
Rakes, Hay, Horse	J. Hayward	58,412
Rakes, Horse	S. B. Reed	51,969
Rakes, Horse	A. Wells	52,098
Rakes, Horse	D. G. Adelsberger	52,122
Rakes, Horse	C. H Finson	52,152
Rakes, Horse	R. M. Ewing	52,360
Rakes, Horse	T. Stewart	52,458
Rakes, Horse	S. R. Nye	53,172
Rakes, Horse	H. R. Hawkins	54,151
Rakes, Horse	E. R. and W. P. Spear	54,228
Rakes, Horse	J. A. Varney	54,448
Rakes, Horse	W. Mosher	54,582
Rakes, Horse	L. Clinton and E. S. Munson	54,862
Rakes, Horse	W. M. Piatt	54,947
Rakes, Horse	B. C. Taylor	54,977
Rakes, Horse	J. King	55,672
Rakes, Horse	H. A. Bailey and A. R. Burdick	55,804
Rakes, Horse	H. Stimmell	55,930
Rakes, Horse	G Deal	56,189
Rakes, Horse	G. L. Heidler	56,222

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Rakes, Horse	E. O. Jones	56, 227
Rakes, Horse	J. N. Baxter	56, 517
Rakes, Horse	P. Lugenbell and T. Barns	56, 960
Rakes, Horse	W. McCord	56, 968
Rakes, Horse	A. J. Curtis W. Curtis and D. J. Roberts	57, 482
Rakes, Horse	D. M. Dunham and J. and A. Webb	57, 488
Rakes, Horse	C. Kugler	57, 520
Rakes, Horse	N. C. Decker	58, 073
Rakes, Horse	J. Dillior	58, 075
Rakes, Horse	J. A. Spear	58, 689
Rakes, Horse	C. S. Huntington	58, 832
Rakes, Horse	J. Wood	59, 113
Rakes, Horse	C. Satterlee	59, 663
Rakes, Horse	F. M. Smith and E. Brumfield	60, 270
Rakes, Oyster	J. Johnson	58, 426
Range and furnace, Combined	W. A. Greene	56, 041
Ranges, Cooking	O. Smith	54, 427
Ranges, Safety valves in water back for	T. S. Speakman	58, 496
Rasper, Peg	E. Townsend	53, 200
Rasps, Cutting	A. Weed	57, 230
Ratchet attachment for harvesters, &c.	W. Coggswell	54, 689
Rattle, Policeman's	F. P. Smiley, C. K. Beecher, and I. Townsend.	60, 072
Raw-hide, Preparing, for manufacture of various articles	W. H Towers	57, 409
Razor straps, Composition for	F. R. Atwood and A. Elston	51, 909
Reamer and tap, Expanding	B. T. Loomis	53, 996
Reapers, Binding attachment to	M. D. Higley and D. L. Columbia	57, 714
Reaping machines	E. P. Russell	55, 910
Reaping machines	R. Bryson	56, 522
Reaping machines	O. Dorsey	56, 534
Reaping machines	H. Fisher and M. Ball	56, 545
Reaping machines	R. Morris	57, 549
Reaping machines	H. Whiting	58, 702
Reaping machines	J. S. Marsh	58, 856
Reaping machines, Binding attachment to	T. W. Peirce	52, 195
Reaping and mowing machines	J. G. Perry	53, 040
Reaping and mowing machines	D. H. Thayer	53, 198
Reaping and mowing machines	M. Clark	55, 467
Reaping and mowing machines	L. B. Hoit	52, 167
Reaping and mowing machines	J. M. Canfield, H. E. Coleman, and E. P. Wheeler.	53, 110
Reaping and mowing machines	H. R. Lavey	54, 374
Reaping and mowing machines	M. Easterbrook	54, 875
Reaping and mowing machines	R Brown	56, 893
Reaping and mowing machines	G. S. Reynolds	58, 026
Receptacles for waste water of well tubes	D. P. Chesbrough	58, 063
Rectifying apparatus	T. Simmons	53, 895
Reed musical instrument	I. T. Packard	54, 395
Reed plates, Stamping	C. Austin	59, 541
Reefing rig, Topsail for	W. G. Smith and D. Hooper	55, 922
Reel, Cord and line	H. W. Chamberlain	58, 378
Reels	D. H. McLean	59, 801
Reels for grain binders	S. D Locke	52, 722
Reels or swifts	A. Rohms and P. Gnetlich	60, 061
Reels, Fishing	A. Hatch	55, 653
Reels, Fishing-line	A. B. Harthill	56, 937
Reflectors for head lights	C. D. Gibson	52, 987
Reflectors for lanterns, &c	W. A. Butler	58, 212
Refrigerator	C. Flack	54, 475
Refrigerator	J. McKelvey	54, 931
Refrigerator	P. A. Vogt	54, 980
Refrigerator	J. C. Gove	55, 085
Refrigerator	A. A. Hinkley	55, 655
Refrigerator	J. Worrall	56, 154
Refrigerator	H. R. Taylor	60, 281
Refrigerator, Milk and cream	J. Burchnall and J. T. Johnson	54, 105
Refrigerator for cooling oil, &c	C. F. Pike	55, 532
Refrigerator for liquids	R. W. McClelland	57, 746
Refrigerator and condenser	S. B. Ellithorpe	52, 227
Refrigerator and cooking apparatus	J. and I. Neuburg	59, 441
Refrigerator building for preserving fruits, &c	J. A. Boyer	57, 670
Refrigerators	J. McKelvey	52, 436
Refrigerators	C. B. Rees and J. B. Tevis	56, 094
Refrigerators, Bars and slats for	J. C. Jewett	60, 523
Register, Billiard	R. H. Ingersoll	52, 417
Register, Billiard	A. Wirsching and W. Zoehe	54, 806
Register, Billiard	O. W. Kellog and H. R. Hill	58, 429
Register, Watchman's	P. L. Schmandt	53, 889
Registering apparatus for printing presses	J. Kirk	55, 774
Registers, Car	J. and C. Gschwind	59, 387
Registers, Gas-meter	W. McDonald	58, 731
Registers, Lumber	F. McManus	55, 327
Registers, Passengers	E. Hambujer	52, 043
Registers, Ticket	J. Solomon	57, 398

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Registers for regulating timekeepers	W. M. Beeman	57, 848
Rein holders, Driving	M. Whipple	57, 803
Rein, Driving, Overcheck	L. G. Sayre	56, 619
Reins for horses	G. T. Chapman	59, 965
Remedy for sore eyes	A. Schuster	51, 868
Rendering apparatus	C. J. Everett	52, 640
Rendering apparatus	C. J. Everett	59, 312
Reservoirs for wells	R. H. Dewey and E. N. Tillotson	53, 584
Reservoirs for wells, Subterranean	A. Palmer and J. Bean	55, 155
Reservoirs, Water, for cooking stoves	E. Bussey	57, 060
Respirators	T. A. Hoffman	58, 255
Retort for generating gas	J. H. Irwin	57, 915
Retorts, Gas	E. Duffee	52, 929
Retorts, Gas	G. W. Harris	60, 183
Retorts for generating gases from oil	S. C. Salisbury	54, 214
Re orts for the manufacture of illuminating gas	A. Milochan	60, 537
Rheumatism, Curing	S. Fouilloux	58, 034
Ribbon, Paper, Holding	W. Orr and G. F. Wright	58, 466
Rice, &c., Hulling	W. G. Adams	57, 838
Riffle boxes	R. H. Dunning	58, 079
Rigging stopper	H. Thompson	55, 789
Ring and buckle	R. C. Dunham	58, 619
Ring for ring and traveler spinning machines	J. Higgins	59, 524
Rings, Finger, scarf, and napkin	L. Sauter	56, 618
Rings, Napkin, Embossing	E. H. Eldridge and T. Leach	54, 515
Rivet or bolt cutter	D. D. Robinson	55, 366
Riveting machine	J. Adt	54, 837
Riveting machines	R. Lyon	57, 045
Robes	J. Klamke	56, 573
Rock-drilling machine	W. Hyde	55, 009
Rock-drilling machine	P. H. Lawrence	56, 577
Rock-drilling machine	G. F. Underhill	57, 797
Rock-drilling machine	C. Burleigh	59, 960
Rockets	W. Hale	53, 933
Rockets	E. S. Hunt	58, 646
Rockets, War	J. J. B. Walbach	59, 487
Rocks, Drilling	C. Burleigh	52, 961
Rocks, Tunnelling	T. Lindsley	55, 514
Rods, Cranks on, Bending	E. Lord	53, 242
Rods, Gauging	W. J. Tait	54, 229
Rods or bars, Metallic, Upsetting and forming articles from	W. Seward	59, 464
Rod-joint, Connecting	T. Shaw	52. 455
Roller, Land	E. J. Knowlton	54, 368
Roller, Pastry	J. S Foster	59, 905
Roller and seed planter, Combined	E. Perin	58, 284
Roller and harrow, Combined	J. Steiner and J. P. Miller	54, 790
Roller and harrow, Combined	J. Davis	58, 613
Roller and harrow, Combined	G. H. Woodruff	60, 455
Roller and cornstalk-cutter	R. R. Gaskill	55, 848
Roller for clothes wringer	J. Murphy	58, 874
Roller for clothes wringer	J. B. Forsyth	59, 798
Roller for clothes wringers, washers, &c	J. B. Forsyth	56, 398
Roller for finishing photographs	W. J. Gordon	59, 507
Roller for wringers	J. B. Forsyth	52, 153
Roller for wringing machines	S. F. Emerson	55, 077
Rollers, Grinding and other, Gearing for	W. E. Sibley	53, 236
Rollers, Drawing	D. Hussey	54, 732
Rollers, Ground	C. D. Roberts	57, 773
Rollers, India-rubber	J. B. Forsyth	59, 580
Rollers, Land	A. S. Skiff	54, 425
Rollers, Inking, Printers', Composition for	W. Harvey	59, 597
Rollers, Printers', Composition for	L. K. Bingham	57, 849
Rollers for wringers	H. Robbins	58, 027
Rollers for spinning machines	J. B. Fuller	54, 067
Rollers and fasteners for clothes wringers	R. B. Hugunin	53, 001
Rollers, Drawing, for spinning hemp, flax, &c	H. Hall	51, 895
Rolling apparatus	H. Waters	57, 021
Rolling, crushing, and kneading machine	C. Bates	56, 877
Rolling-die apparatus	H. Waters	59, 488
Rolling pin, &c	T. A. Williamson and C. A. Richardson	59, 701
Rolls, Dressing	C. McBurney	53, 465
Rolls for the manufacture of three-headed railroad rails	J. Gower	54, 329
Rolls for clothes wringers	H. E. Smith	52, 615
Rolls for clothes wringers	H. Robbins	54, 561
Roof	M. Simmons	52, 613
Roof, Improved	C. S. Clark	57, 290
Roof, Car, Railroad	W. H. Myers	57, 173
Roofing	O Eaton	52, 549
Roofing	J. McVay	53, 162
Roofing	R. Norwood	55, 891
Roofing	J. F. Hodgson	56, 751
Roofing	A. Brisbane	57, 080
Roofing	W. Gilbert	58, 246
Roofing cement	W. Greene	52. 992

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Roofing cement	W. Green	55, 087
Roofing composition	B. Hinkley	57, 324
Roofing composition	J. G. Holliday	58, 169
Roofing composition	H. H. Schauck	59, 462
Roofing composition	J. P. Thompson	59, 682
Roofing, Composition for	R. B. Smith	56, 818
Roofing, Composition for	C. K. and S. T. Daniel	57, 874
Roofing, &c., Composition for	C. Spear	57, 400
Roofing, Composition for	J. P. Thompson	57, 999
Roofing, Composition for	F. Bearse and G. E. Hopkins	58, 975
Roofing, Composition for	J. F. Boynton	59, 348
Roofing compound	G. Duncan	53, 281
Roofing, Mastic, Spreading	W. R. Coe	57, 091
Roofing material	J. Rouse	58, 484
Roofing material	W. L. Potter	59, 065
Roofing material, Heating and melting	J. Munn	56, 783
Roofing of buildings	W. B. Beach	55, 805
Roofing to buildings, Attaching	T. S. Card	57, 860
Roofing and other purposes, Fire-proof felt for	M. A. Johnson	60, 381
Roofing and clapboarding	S. J. Seely	59, 928
Roofs, Metallic, Painting, Composition for	C. D. Smith	54, 426
Roofs of buildings, Snow and ice guard for	S. R. Hathorn	58, 411
Rooms and stairs, Protector for corners of	H. C. Richards	56, 800
Roots for feed, Cutting	E. J. Roosevelt	55, 164
Rope guard	O. B. Latham	55, 506
Rope machines	J. Blackie	51, 915
Rope-driving machine	S. B. Whiting	59, 697
Rope, Wire, Weaving	F. Hazard	56, 220
Ropes Hook and fastening for	C. B. Bristol	59, 890
Rotary diggers	W. F. Quinby and G. G. Lobdell	58, 289
Roving frames, Flyers for	T. Mayor	57, 938
Rowlocks	J. W. Norcross	56, 086
Rubber packing	C. L. Frink	54, 523
Rubber, Artificial	W. F. Bond	57, 468
Rubber, Cutting, into threads	D. W. Rust and G. Buzzee	58, 028
Rubber, Hard	C. McBurney	53, 643
Rubber, Rolling	C. V. Meade	59, 854
Rubber, Hard, Articles of manufacture from	W. H. Halsey and M. Fitzgibbons	53, 921
Rubber, Hard, or gutta-percha, for articles of dress, Treating	W. Halsey and M. Fitzgibbons	53, 922
Rubber articles, Method of protecting	J. R. Moffitt and F. D. Hayward	58, 870
Rubber for dental purposes	E. L. Simpson	58, 901
Rubbing machines, Electro-magnetic	E. D. Averell	55, 594
Rudder	M. W. Ruthven	53, 936
Rudder	J. M. Croft	54, 474
Rudder	M. Wappich	59, 296
Rudder for vessels	P. Dinzey	55, 028
Rudder for steering vessels	W. J. Millar	54, 002
Rudder to spindle-shaped hulls, Application of	W. L. and T. Winans	58, 743
Runners to wheels of wagons, Attaching	E. Ward	52, 916
Rule joints, Making	D. H. Stephens	59, 871
Ruler	R. N. Eagle	53, 961
Ruler, blotter, and paper cutter, Combination of	L. [illegible]	53, 833
Rulers	G. [illegible]hramm	52, 253
Rulers, Parallel	U. Smith	52, 616
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Sabot	F. W. Schroeder	55, 786
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Saddle tree	S. E. Tompkins	52, 342
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Saddles	J. Meyer	58, 121
Saddles, Side	C. A. Bartlett	56, 875
Saddles and harness	A. Angelini	53, 932
Saddles, Harness	J. Fye	60, 168
Saddles, Harness, Cart	H. A. Rains	59, 651
Sad-iron	C. Barry and O. W. Preston	52, 513
Sad-iron	G. G. Kniffen	54, 174
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Safe and table, Provision	J. S. Robinson	53, 877
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Safes	L. H. Miller	60, 405
Safes, Fire-proof	S. T. Fowler	51, 937
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Sail	H. Brown	55, 236
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Sails, Fore and aft	G. A. Bigelow	52, 517
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Salt block, Apparatus for manufacture of	N. Barnard and J. G. Spiller	60, 120
Saltpetre	C. Delafield	52, 145
Saltpetre	V. E. Keegan	59, 611
Saltpetre and white lead, Manufacture of	C. Delafield	55, 249
Salt, sugar, &c., Evaporating solution of	O. Macdaniel	54, 746
Salve	D. W. Craft	51, 805
Salve	G. Backett	56, 513
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Sand bars from rivers, removing	E. Bell	54, 489
Sand from water in wells, Separating	T. Rose	57, 974
Sand and other mineral substances, Washing	W. M. Lanehart and J. C. King	59, 039
Sand cores for axle skeins and hub boxes, Making	J. G. Holt	59, 840
Sandal, Adjustable	J. M. Wilkinson	54, 804
Saponifier	H. Pemberton	53, 865
Sash fastener	R. Vose	51, 982
Sash fastener	G. W. Wareham	51, 983
Sash fastener	J. C. Rankin	53, 870
Sash fastener	J. W. Elliot	55, 475
Sash fastener	R. E. Monaghan	56, 080
Sash fastener	B. S. Hyers	60, 633
Sash fastener, Window	E. Calderwood	51, 918
Sash fastener	De Lance Cole	59, 558
Sash fastener	B. Bray	54, 286
Sash fastener	W. J. Ross	54, 962
Sash fastener	F. B. Van Vleck and G. Nichols	56, 642
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Sash fastening	B. Beach	56, 347
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Sash supporter	W. S. Van Hoesen	58, 322
Sash supporter and fastener	I. H. Wait	53, 907
Sash supporter and fastener	W. F. Hill	54, 158
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Sash supporter	F. P. Catlin	52, 119
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Sash supporter	E. A. Campbell	55, 057
Sash supporter	M. V. B. White	55, 940
Sash, Window	A. Roehrig	55, 538
Sash, Window, Operating	H. Smith	52, 333
Sash, Window, Supporters for	H. C. Hunt	55, 659
Sash holder and fastener	E. F. Driggs	60, 156
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Sash and frame for windows	P. L. Butler	51, 799
Sashes of ventilating windows, Operating	E. Lockwood	54, 818
Sausage stuffer	P. Bradford	55, 760
Saw-filing machine	C. P. Frazer and C. C. Hinchman	54, 709
Saw-filing machine	J. H. Rector	54, 206
Saw-filing machine	A. Sweetland	58, 151
Saw-filing machine	J. W. H. Doubler	59, 193
Saw gauge, Angular	E. G. Stanley and J. Goodrich	58, 498
Saw-grinding machine	J. Crookes	53, 120
Saw-grinding machine	J. G. Baker	53, 725
Saw-grinding machine	J. T. Baker	54, 813
Saw gummer	P. Roche	56, 100
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Saw set	E. Smith	52,218
Saw set	J. A. Hopkins	54,547
Saw set	J. Clarridge	60,619
Saw set	R. G. Chase	52,638
Saw set	J. Lyle	57,044
Saw teeth, Filing	M. M. Pettes	60,237
Saw teeth, Sharpening, Swage for	J. E. Emerson	55,262
Saw teeth, Upsetting	N. F. Stone	54,037
Saw, Wood, Hand	C. M. Day	58,616
Saw toothing machine	A. Sowden	57,265
Saws	J. Lippincott	53,157
Saws	J. Woodrough	54,827
Saws	C. T. Shoemaker	55,375
Saws	J. Lippincott	55,423
Saws	J. E. Emerson	56,142
Saws	W. Clemson	57,088
Saws	E. J. Robinson	58,297
Saws	J. E. Emerson	57,627
Saws	A. Boynton	59,951
Saws	W. P. Miller	58,664
Saws	J. E. Atwood	60,321
Saws, Circular, Attaching, to their arbors	A. L. Rice	54,774
Saws, Circular, Feed rollers for	J. Mutty	52,188
Saws, Clamps for holding	J. Briggs	56,519
Saws, Cross-cut, Securing, to their handles	E. Andrews	58,569
Saws, Hand	R. M. Breckenridge	52,131
Saws, Handles to, Attaching	N. Homes	58,828
Saws to their handles, Attaching	W. H. Gilliam	52,285
Saws, Sharpening	J. Borthwick	59,950
Saws for cotton gins	T. C. Craven	56,684
Sawing machine	W. Melville	51,851
Sawing machine	A. McFarland	52,434
Sawing machine	J. Kunz	53,453
Sawing machine	C. L. Pierce	53,670
Sawing machine	Z. Swope	55,738
Sawing machine	C. W. Sappenfield	59,275
Sawing machine	P. A. Gerry	59,994
Sawing machine	H. Hassenpflug	60,510
Sawing machine	E. Hard	60,628
Sawing machine, Wood	I. Allard	58,933
Sawing machine, Self-regulating tension for	T. Zinck	60,456
Sawing machines	J. A. Geer	52,039
Sawing machines	W. G. Lumbard	52,304
Sawing machines	H. Fryatt and E. C. Edmonds	53,804
Sawing machines	W. J. Wells	54,046
Sawing machines	A. Saur and A. B. Colton	54,608
Sawing machines	L. F. Heath	55,099
Sawing machines	B. W. Durkee	55,202
Sawing machines	T. L. Yates	56,138
Sawing machines	D. R. MacLennan	56,426
Sawing machines	J. D. Mathews	56,965
Sawing machines	S. W. Putnam	57,046
Sawing machines	G. L. Willcox	57,612
Sawing machines	N. Brockway	58,586
Sawing machines	J. Hoyt	58,726
Sawing machines	H. A. Daniels	59,368
Sawing machines	S. Perry	59,641
Sawing machines	A. E. and J. V. Warner	60,297
Sawing machines	T. H. Cushing	60,621
Sawing machines	W. H. Stewart	60,649
Sawing machines	C. R. Warner and M. Bales	58,921
Sawing machines	L. S. Hayes	59,392
Sawing machines, Stone	F. S. Packard	59,747
Sawing and planing machines, Dust and shaving conveyors for	D. R. Miller	58,456
Scaffold	F. P. Newbanks and H. M. Powell	56,437
Scaffold	C. M. Tanner	60,085
Scaffold bracket	H. Beckwith	60,122
Scaffolds, Holding and adjusting	W. A. Devon	59,824
Scale	C. E. Hoffman	56,940
Scale beams	H. S. Cushing	54,509
Scale beams	J. F. Keeler	57,921
Scale pencils	B. Worcester	60,315
Scale in boiler tubes, Tool for removing	P. C. Rowe	54,963
Scale for weighing ice	T. T. Fowler	56,547
Scales, Automatic calculators for	J. Johnson	57,332
Scales, Bent lever	J. King, jr	55,117
Scales, Compass, Mariners'	J. Reid	57,970
Scales, Letter, Beam of	R. Murdock	57,364
Scales, Measuring, for coffins	J. W. Hyde	58,262
Scales, Platform	F. M. Strong and T. Ross	55,963
Scales, Platform	E. Sampson	57,640
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Scales, Weigh lock	E. Sampson	57,641
Scales for weighing	L. Shepard	53,050

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Scissors	L. C. White	53, 719
Scissors	W. W. Grier and R. H. Boyd	56, 928
Scissors sharpener	J. J. Tobey	59, 785
Sciss rs sharpener and sewing work holder, Combined	C. E. Staples	57, 591
Scissors and knife sharpener	M. V. B. Howe	55, 867
Scissors and knife sharpener	T. T. Prosser and J. Lawson	57, 564
Scissors and knife sharpener and knife polisher	J. W. Wheeler	55, 404
Scoop, sifter, grater and holder combined	F. Bucknam	54, 679
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Scraper and plough, Combined	R. Elliot	51, 817
Scrapers, Cabinet makers'	F. A., J. H., and D. G. Williams	56, 651
Scraping machines, Wood	E. S. French	58, 722
Screen, Dust, for stove and furnace doors	J. Reynolds	52, 604
Screen, Fire	H. P. Gengembre	54, 713
Screen, Grain	C. F. Baylor	58, 050
Screen, Window	A. B. Magoun	52, 726
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Screw clamp for bending axletree	L. Wilkinson	59, 934
Screw clamps, Hand	H. Schmidt	57, 195
Screw clamps, Hand	W. Ormsby	59, 861
Screw cutters	M. M. Young	55, 571
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Screw heads and coffin nails, Finishing	A. A. Randall	55, 783
Screw plates	N. Ziller	56, 663
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Screw taps, Construction of	B. Hotchkiss	55, 493
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Screws, Capping	J. W. Bishop	59, 344
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Screws for stools	W. A. Ingals	54, 733
Screws and bolts	W. Weaver	52, 631
Scrubber and mop	W. T. Grant	57, 703
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Scrubbing machine	W. J. Smyth	52, 220
Scythes	C. M. Hodges	57, 440
Scythe stones, Manufacture of	A. G. Squire	57, 790
Seal for jars and cans	H. S. Fisher	58, 998
Seal, Metallic, for envelopes	R. S. Jennings	55, 955
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Sealing fruit cans and other vessels	W. K. Lewis and J. W. Bailey	54, 182
Sealing-wax adhering to moulds, Preventing	N. W. Kumber	56, 576
Seams for sheet metal ware	P. H. Miles	55, 015
Seat, Car, Railway, Adjustable	W. N. Bragg	58, 713
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Seat and desk, School	G. W. Hildreth	55, 293
Seat and desk, School	G. Munger	57, 824
Seat and desk, School	C. W. Sherwood	59, 466
Seat and hat rack	E. S. Blake	57, 076
Seats, Car	E. Lockwood and G. W. Pitman	53, 842
Seats, Car, Chair and sofa	J. W. Cochran	54, 863
Seats, Car and couches	T. Sharpe	57, 198
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Seats, Spring	L. W. Fillebrown, jr	56, 200
Seats, Spring, for carriages	F. M. Hubbard	56, 753
Seats, Water-closet	L. Alexander	54, 480
Seats for carriages, Shifting	C. K. Mellinger	59, 920
Seats for harvesters	T. S. Brown	54, 245
Seats for vehicles	J. I. Peck	53, 329
Seats for water-closets, Supplementary	L. H. Londheim	52, 581
Seats and couches for railroad cars	H. Allen	55, 448
Seats to the beds of vehicles, Attaching	W. Bench	53, 371
Seed distributor	M. D., E. C. and A. Wells	57, 694
Seed-sower, Hand	O. Dann	58, 993
Seed, Clover, Gathering	D. K. Wertman and W. H. Reinbold	58, 517
Seed, Cotton, Planting	J. G. Clark	58, 281
Seed, Cotton, Planting	N. E. Badgley	58, 752
Seed, Cotton, Preparing for planting	W. Blessing	56, 140
Seeder and planter	H. H. Webster	52, 500
Seeder and cultivator, Combined	J. L. Fountain	54, 139
Seeder and cultivator, Combined	J. Miller	55, 142
Seeder and cultivator, Combined	S. C. Schofield	56, 454
Seeder and cultivator, Combined	T. J. Price	57, 185
Seeder and cultivator, Combined	W. J. Freeman	58, 243
Seeder and fertilizer, Combined	S. Guild	52, 563
Seeder and harrow, Combined	A. Fairchild	59, 827
Seeder, Broadcast and corn-planter, Combined	A. J. Edgett	58, 166
Seeders, Broadcast	G. Race	52, 319
Seeding machine	J. D. Cochran	54, 506
Seeding machine	J. D. Smith	59, 283
Seeding machine	J. D. Field	59, 829
Seeding machine	J. B. Pitts	52, 445
Seeding machine	B. D. Cook	55, 470
Seeding machine	H. D. Dann	60, 147
Seeding machine	W. P. Penn	59, 639
Sewing machine	C. Denton	53, 525
Seeding machine and cultivator	A. Dodge	53, 960
Seeding machine and cultivator, Combined	W. W. Wiley	53, 072
Seeding machine roller and harrow, Combined	H. Bundel	52, 135
Seeding machines	Z. D. Waters	53, 909
Seeding machines	H. Thomason	59, 681
Seeding machines	F. A. Hill	60, 189
Seeding machines	J. M. Carr	58, 214
Seeding machines, &c	W. S. Coffman	58, 219
Seeding machines, Broadcast	D. C. Baughman	57, 068
Seeding machines, Hitching horses to	J. B. Ruperts	52, 321
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Sewers	T. K. Reed	52, 368
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Sewing machine	J. Hanlon	52, 847
Sewing machine	J. S. McCurdy	53, 743
Sewing machine	T. L. Melone	54, 577
Sewing machine	J. Hayes	55, 029
Sewing machine	J. C. Tucker	56, 641
Sewing machine	M. Schwalbach	56, 805
Sewing machine	A. Leyden	57, 157
Sewing machine	H. W. Fuller	58, 245
Sewing machine bobbins	C. F. Ingraham	57, 514
Sewing machine braid guide	T. Robjohn	54, 602
Sewing machine, Button-hole	J. A. and H. A. House	55, 863
Sewing machine, Button-hole	J. A. and H. A. House	55, 865
Sewing machine, Circular	L. Fossee	60, 354
Sewing machine clamp	J. A. and H. A. House	55, 866
Sewing machine, Fan attachment for	T. R. Lovett	53, 158
Sewing machine, Feed-wheel of	A. Galleth	57, 116
Sewing machine, Feeding device for	J. Williams	53, 514
Sewing machine gauge for tucking, felling, and binding	M. A. Duffy	59, 983
Sewing machine guide	J. T. Caperwell	56, 527
Sewing machine guides	H. C. Goodrich	60, 360

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Sewing machine guide for stitching hat tips to the side linings	H. E. Bodwell, jr	54,844
Sewing machine guides	E. H. Knight	54,367
Sewing machine hemmers	G. C. Overhiser	52,646
Sewing machine, Marking attachment to	M. J. West	52,918
Sewing machine, Needle feed of	J. A. Davis	58,614
Sewing machine shuttle	S. M. Tyler	58,182
Sewing machine shuttle	F. Etzold	58,399
Sewing machine shuttle	E. H. Smith	59,088
Sewing machine shuttle	G. H. Leuher	60,021
Sewing machine, Shuttle carriers for	J. Shellenberger	57,585
Sewing machine shuttles	N. Read and G. W. Wyckoff	52,881
Sewing machine, Stop device for	A. L. Dewey	56,909
Sewing machine, Thread tension, Device for	T. A. Chandler and H. C. Goodrich	53,783
Sewing machines	E. E. Bean	51,890
Sewing machines	J. S. McCurdy	52,870
Sewing machines	E. H. Smith	53,353
Sewing machines	W. M. Leavens	54,926
Sewing machines	A. Warth	55,182
Sewing machines	G. L. Dulaney	56,020
Sewing machines	A. Warth	56,646
Sewing machines	D. B. Piper	56,990
Sewing machines	T. K. Reed	57,047
Sewing machines	W. Chicken	57,287
Sewing machines	W. H. Halsey and M. Fitzgibbons	57,500
Sewing machines	S. M. Tyler	58,181
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Sewing machines	J. F. Andrews	58,366
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Sewing machines	T. Hall	59,997
Sewing machines	E. P. Richardson	59,265
Sewing machines	T. K. Reed	60,241
Sewing machines	F. A. Pratt	60,418
Sewing machines	I. M. Singer	60,433
Sewing machines, Binder for	G. Vincent	59,879
Sewing machines, Binder guides for	T. Rodgers	53,243
Sewing machines, Binding guides for	W. J. Chaplin	52,387
Sewing machines, Button-hole	J. McCloskey	55,688
Sewing machines, Button-hole	J. A. and H. A. House	55,864
Sewing machines, Caster for	J. N. Wilkins	55,567
Sewing machines, Cast-off, of waxed thread	C. E. Langmaid	58,550
Sewing machines, Cloth guide and binder gauge for	L. T. Conant	56,714
Sewing machines, Covers for	A. J. Thompson	55,023
Sewing machines, Feed adjusting device for	G. Rehfuss	52,932
Sewing machines, Feed motion for	A. L. Dewey	56,730
Sewing machines, Feed wheels for	A. Galleth	55,847
Sewing machines, Feeding mechanism for	G. N. Goodspeed	54,816
Sewing machines, Folding and plaiting	W. Preiss	57,374
Sewing machines, Hemming guides for	T. W. Brownell and P. C. Hard	58,210
Sewing machines, Hemming guides for	S. D. Ogburn	58,670
Sewing machines, Loop check for	P. Rodier	59,659
Sewing machines, Marking device for	C. O. Yale	60,111
Sewing machines, Needle for	W. H. Cately	56,902
Sewing machines, Needle threader for	M. B. Foote	60,353
Sewing machines, Presser foot of	A. J. Tewksbury	57,010
Sewing machines, Ruffling attachment for	DeW. C. Carey	58,376
Sewing machines, Spool thread regulator for	W. H. Hawkins	55,417
Sewing machines, Tension pulley for	J. C. Girardiu	54,715
Sewing machines, Thread cutter for	H. W. Dennis and J. Baker	52,398
Sewing machines, Thread tension for	P. Evens, jr	53,527
Sewing machines, Waxed thread	T. J. Halligan	54,145
Sewing machines, Waxed thread	T. J. Halligan	59,127
Sewing machines, Wheeler and Wilson Rotating hook of	J. A. and H. A. House	56,224
Sewing machines for sewing boots and shoes	A. Destony	56,729
Sewing machines for sewing on sweat linings for hats	R. Eickemeyer	52,698
Sewing machines for sewing sweat linings to hats	T. A. Sanford and D. Wheeler	53,927
Sewing machines for sewing together the soles and uppers of shoes.	W. Duchemin	59,715
Sewing machines for stitching button-holes	J. M. Clements	57,451
Sewing machines for stitching cord to the edge of fabrics	W. B. Bartram	54,670
Sewing machines for stitching eyelet holes	W. B. Bartram	54,671
Sewing the seams of looped fabrics, Machines for	E. E. Kilbourn	59,746
Sewing work holders and scissors sharpeners, Combined	C. E. Staples	57,591
Sextants	G. Davidson	54,698
Shackle for carriage tongues	F. R. Pollard	56,606
Shackle, Swivel	T. B. Roehe	55,162
Shackles for prisoners	J. C. Gardner	54,889
Shade, Heating for gas-burners and lamps	A. H. Lochman	53,456
Shade, Lamp, Supporter for	J. H. Connelly	56,011
Shade, Lamp and chimney, Combined	J. H. Connelly	56,010
Shade, Window	C. D. Blinn	52,018
Shade, Window	H. Read	55,907
Shade, Window, Fixture for	J. Horner and S. Van Doren	54,908
Shade, Window, Paper	L. A. Colbert	53,786
Shade, Window, Slats for	P. P. Simmons	55,919

Invention or Discovery.	Name of Patentee.	No.
Shade fastening, Window	E. Steele	58, 029
Shades for protecting the eyes	J. F. Spence	58, 907
Shades, Lamp	M. Stewart	52, 768
Shades, Lamp	J. McFarland	53, 320
Shades, Lamp	J. H. Webber	56, 647
Shades, Lamp	J. V. Dunlap	59, 566
Shades, Lamp	A. Shepard	60, 577
Shaft for drilling	J. H. Clapham	54, 112
Shafts, Oiling bodies rotating around	O. Tufts	60, 444
Shafts, Turning	J. F. Bogardus	57, 620
Shafts, Vertical, Lubricating	J. F. Schuffeuecker	52, 454
Shafts, Well-boring, Coupling joints for	J. H. Bell	57, 664
Shafts to sleighs and carriages, Attaching	G. Coffin	59, 970
Shafting, Hangers for	J. E. Atwood	54, 275
Shafting, Straightening	R. Safely	60, 260
Shafting, Turning	R. Safely	60, 259
Shank laster	O. R. Clark and F. H. Slyter	52, 389
Shank laster	W. N. Flagg	52, 280
Sharpening stones, Composition for making	R. R. Miller and A. W. Carver	60, 536
Shaving cases, Portable	T. P. Conard	56, 715
Shearing apparatus	I. Lamplugh	58, 267
Shearing, forging and punching device	J. E. Emerson	55, 263
Shearing sheep, Machine for	M. C. Davis	53, 277
Shears	P. F. Crouch	54, 508
Shears	P. C. Clapp	56, 668
Shears, Pruning	A. Baumann	55, 043
Shears, Pruning	F. Binder	59, 168
Shears, Sheep	A. H. Kennedy	52, 293
Shears, Sheep	T. and J. W. Wise	55, 569
Shears, Sheep	J. A. Strong	58, 695
Shears for cutting bolts	D. H. Hickcok	52, 714
Shears for cutting bolts	J. Guthrie	57, 705
Shears, Hand-punches, &c., Operating	W. B. Mason	56, 772
Shed, Sheep	J. Knupp and H. S. Elliott	60, 015
Shed and rack, Sheep, Combined	T. P. Sibley	57, 983
Shed and sheep rack, Combined	D. Porter	57, 965
Sheep, Composition for curing rot in	H. D. Niles and J. C. Brooks	55, 697
Sheep, Foot rot in, Cure of	D. Kinney	59, 845
Sheep holder and shearing table	S. L. Sage	54, 023
Sheep holder for shearing	C. Albert and J. J. Shank	54, 479
Sheep holders	D. K. Reed	58, 290
Sheep rack and holder	E. Page	55, 896
Sheep, Shearing, Machine for	M. C. Davis	53, 277
Sheep, Shearing, Machine for	A. Washburn and T. Brintnall	59, 103
Sheep, Shearing, Table and holder for	A. M. Culver	58, 991
Sheep for shearing, Holding	J. Day	56, 188
Sheep, hogs, &c., Catching, Instrument for	R. Ralston	53, 869
Sheet metal, Strips of, Securing together	W. J. Gordon	56, 494
Shelf, Adjustable, for stove pipes, &c	S. V. Beckwith	58, 711
Shellers, Corn	W. Colwell	58, 986
Shells, &c	T. P. Shaffner	60, 567
Shells, Explosive	I. P. Noyes	52, 314
Shelves, Store, Adjustable	S. L. Latta	56, 422
Shingle	J. Sherman	52, 004
Shingle machine	S. Heywood	53, 823
Shingle machine	C. L. Pierce	54, 010
Shingle machine	H. Rogers	54, 019
Shingle machine	O. Stoddard	57, 405
Shingle machine	J. B. Dougherty	58, 618
Shingle machine	H. White	56, 648
Shingle machine	C. L. Pierce	55, 702
Shingle machine	A. M. Connett	58, 938
Shingles, Sawing	F. B. Northrup	60, 542
Ship-building	N. W. Wheeler	52, 100
Ship, Steam, Rotary	D. F. Masnata	53, 160
Shipper device	J. F. Light	52, 059
Ship's bottom, Coating, Compound for	C. J. Eames	59, 568
Ships, Bottoms of, Protecting	C. P. Coles	53, 756
Ships, Coating, Composition for	C. R. Miiks	56, 078
Ships, Construction of	R. Montgomery	57, 359
Ships, Construction of	J. Weems	58, 742
Ships, Steam, Screw, Revolving	D. T. Masnata	53, 316
Ship's table	J. H. Stoddard	56, 117
Ships, Trimming apparatus for	W. L. and T. Winans	57, 834
Ships, Coupling for propeller shaft of	W. L. & T. Winans	56, 835
Ships, Spindle shaped propeller for	W. L. & T. Winans	56, 836
Shirt bosom patterns	M. Rosenthal	52, 888
Shirt bosoms	C. F. Pidgin	58, 131
Shirt bosoms, Paper	T. A. Curtis	52, 784
Shirt bosoms, Paper	J. C. Arms	52, 812
Shirt bosoms, Paper	C. C. Taylor	52, 907
Shirt bosoms, Paper	C. M. Lee	53, 455
Shirt bosoms, Paper, Machines for making	S. B. Hill	53, 615
Shirt-collar attachment	J. Proud	56, 610

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Shirt stud	C. Padmore	59,635
Shirts, Paper	H. M. Remington	54,408
Shoe	L. H. Proctor	54,954
Shoe	A. Ballard	55,041
Shoe binding	M. and R. B. Packard	60,543
Shoe binding, Manufacture of	M. H. Merriam and E. L. Norton	55,329
Shoe binding, tape, &c., Winding	M. H. Merriam and E. L. Norton	55,332
Shoe cleaner	B. F. Early	57,102
Shoe fastener and slide lacing	R. Adams	58,364
Shoe lacing	L. A. Sprague	51,878
Shoe lacing fastening	G. Butterfield	57,247
Shoe shanking	T. K. Reed	58,178
Shoe soles, Cutting	J. Downing	54,131
Shoe string fastener	E. S. Scripture	56,806
Shoe peg float	G. G. Townsend	60,596
Shoe tips, Securing	P. Riley	59,656
Shoe for car brakes	J. Bing	58,297
Shoe for stamping machinery	P. W. Gates	56,321
Shoes	J. C. Bailey	52,110
Shoes	E. Chesterman	52,138
Shoes	T. Merkel	52,732
Shoes, Gaiter	A. M. Preble	53,483
Shoes, India-rubber	G. H. Fowler	54,883
Shoes, Water-proof	J. Letson	59,419
Shoes and dies for grinding and amalgamating machines	F. G. Belknap	52,015
Shoes to horses, attaching	T. H. Ince	55,215
Shooting gravel at cows upon railroad tracks	S. Scotton	54,783
Shooting boards, Carpenters'	J. Jones	52,719
Shot, Separating	W. A. Shaw	52,003
Shoulder-braces	F. Durand	52,400
Shoulder-braces	A. N. Smith	60,582
Shovel plough	T. Terrel	54,623
Shovel, Coal, Handle for	J. Pfeifer	57,759
Shovel, Malt	W. Beach	57,669
Shovel and tongs	R. D. Bradley	56,169
Shovel and tongs, Combined	H. Ogborn	52,590
Shovels	S. J. Goucher	58,636
Show-case	J. Haines	56,931
Shutter fastening	E. Cole	51,924
Shutter fastening	J. D. Winslow	57,239
Shutter fastenings	J. Harrar	55,095
Shutter and blind fastening	C. H. Gilman	53,601
Shutters, Window	B. McCollum	59,430
Shutters, Window, Bolt for	E. Childs	51,803
Shutters, Venetian	G. L. Chapin	57,675
Shuttles and bobbins for looms	C. Unverzagt	54,445
Shuttle-box motion in looms for weaving figured fabrics	C. Duckworth	51,932
Shuttles, Tatting	A. Dobrowsky	55,254
Sickle heads for harvesters	M. H. Hilburn	56,749
Sickle sections, Cutting	S. C. Hall	60,189
Sickles of harvesters, &c., Sharpening	J. Jann	59,770
Sieve	T. M. Sheppard	51,871
Sieve, Flour	C. E. Yager	54,994
Sieves, Mill	E. D. Norton	55,890
Sieves, Wire, Making	E. B. Bigelow and C. H. Waters	55,411
Sifter	N. L. Robertson	59,927
Sifter, Ash	P. Harlow	54,149
Sifter, Ash	P. Ceredo	59,964
Sifter, Ash, Coal	J. W. Campbell	52,486
Sifter, Coal	E. G. Anthony	53,254
Sifter, Coal and ash	W. R. Evans	57,492
Sifter, Drug and spice	W. Devines	52,693
Sifter, Flour	H. Tilden	51,881
Sifter, Flour	A. E. and J. B. Blood	51,992
Sifter, Flour	W. C. McGill	52,729
Sifter, Flour	H. F. Read	52,746
Sifter, Flour	W. G. McGill	53,644
Sifter, Flour	S. D. Jones	53,987
Sifter, Flour	C. Burnham	54,106
Sifter, Flour	W. C. McGill	54,575
Sifter, Flour	D. Spencer	54,788
Sifter, Flour	B. Illingsworth	59,315
Sifter, Flour and meal	E. C. Sears	54,609
Sifter, Flour and meal	F. Arnold	56,692
Sifter, Flour, and measure	G. G. Carver	52,266
Sifter, Rotary	M. F. Morse	60,539
Sifter and coal scuttle	C. L. W. Baker	56,874
Sifter and strainer	J. M. Muhlig	56,083
Sifter and coal hod, Combined	B. F. Brown	59,954
Sifter, grater, scoop, and holder, Combined	F. Buckman	54,679
Sifter, measure, and flour dipper	G. G. Carver	54,857
Sifter, mixer, and kneader, Flour	E. A. Adams	59,335
Sifters, Ash	C. L. Pierce	58,132
Sifters, Flour	K. F. Worcester and J. B. Perkins	56,317

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Sifting and screening apparatus	S. C. Maine	57,529
Signal, Drawbridge	L. B. Edgecomb	56,491
Signal codes for electric telegraphs	F. J. Bolton	58,562
Signal tower	J. Dow	56,536
Signal, Railroad	T. Stead	58,910
Signal lights, Railroad	E. H. Tobey	60,594
Signal for railroad drawbridges	A. F. Smith	58,492
Signalling apparatus	J. S. Gisborne	60,502
Signals, Fog	G. P. Goulding, D. Clark, and J. Dickason.	59,589
Signals, Illuminating, Igniting	J. J. Detwiler	60,491
Signals, Alarm, Railroad	J. H. Harris	52,710
Signals, Railway	A. W. Livingston	51,952
Signals, Railway	P. F. Milligan	53,651
Signals, Telegraphic	R. A. Jones and J. Hedges	59,148
Signs, Illuminated	J. Harrison	57,711
Silk from living spiders and other silk producers	B. G. Wilder, S. Wales, and W. Nichols.	51,988
Silk and other threads, Twisting, stretching, cleaning, and reeling.	T. Kohn	58,434
Silk, &c., Stretching	G. Holland	58,256
Sill and weather strip	J. E. Lindsley	55,683
Silver and gold washing apparatus	J. Hendy	52,850
Silver and gold, Amalgamating	G. B. Simpson	52,456
Silver and gold with leaf, Amalgamating	H. L. Fulton	55,273
Silver and gold from ores, Extracting	C. F. Carpenter	53,569
Silver and gold from quartz, &c., Extracting	W. M. Fuller	51,822
Silver, gold, and copper ores, Disintegrating and desulphurizing.	F. F. Brower and G. C. Campbell	52,132
Silver, gold, and copper, Parting	G. A. Scherpf	52,325
Silver, gold, and copper ores, Reducing refractory	C. W. Harvey	53,444
Silver and gold from ores, Separating	J. H. Edward and J. L. Hayes	52,834
Silver and gold from ores, Separating	W. Crookes	54,829
Silver and gold from ores, Separating	E. Brown	59,955
Sinkers, Fishing-line	J. R. Martin	56,857
Sinkers, Fishing-line	L. A. Burnham	58,211
Sinks, Culinary	Z. Hunt	56,225
Size, starch, &c., Preparing	J. Briggs	56,356
Skate	E. H. Barney	52,013
Skate	G. B. Sennett and H. Essex	52,212
Skate	J. R. Tempest	52,624
Skate	H. Clark	53,414
Skate	B. H. Hibler	54,344
Skate	J. L. Plimpton	55,901
Skate	J. Kinzer	57,335
Skate	T. W. Arvine	58,367
Skate	G. Scott and J. W. Smith	60,431
Skate	T. Harcourt	60,182
Skate fastener	M. Fleisher	59,575
Skate fastening	E. G. Chormann	56,369
Skates	W. A. Sutton	57,597
Skates	M. Fleisher	58,084
Skates	A. Mabon	58,440
Skates	A. W. Elmer	59,796
Skates	H. W. Dopp and C. P. Weiss	59,899
Skewers, Making	L. W. Boynton	53,107
Skewers, Pointing	L. W. Boynton	53,108
Skids for supporting barrels	W. W. Doane and W. P. Burr	58,787
Skin, Irritating the, Instruments for	F. Klee	55,775
Skins and hides	H. Napier	59,251
Skins and hides, Fleshing and stoning	J. S. Wheat	59,692
Skins, hides, furs, &c., Preparing	J. A. Roth	55,715
Skirt elevator, Dress	T. V. Phelps	56,341
Skirt elevators	P. J. Borris	58,053
Skirt, Hoop, Frames for	A. Raffel	52,602
Skirt, Hoop, Supporters for	E. Blakeslee	57,077
Skirt lifters, Ladies'	T. H. Bradley	54,496
Skirt supporter, Ladies'	L. C. Pennel	59,640
Skirt supporters	P. V. Harrington	55,651
Skirt supporters	J. Taggart	58,505
Skirt-supporting corsets	C. A. Griswold	56,210
Skirt, Hoop, Wire for, Attaching	J. E. Earle	55,258
Skirt and corset supporters	E. Blakeslee	55,608
Skirts, Hoop	L. Lobenstein	52,427
Skirts, Hoop	J. P. Buzzell	52,637
Skirts, Hoop	P. E. Shiffield	54,785
Skirts, Hoop	A. M. Bardwell	54,998
Skirts, Hoop	M. Fishel	55,266
Skirts, Hoop	T. S. Gilbert	55,768
Skirts, Hoop	T. D. Day	56,016
Skirts, Hoop	J. E. Atwood	56,512
Skirts, Hoop	C. Neumann	56,787
Skirts, Hoop	J. Schleisinger	56,803
Skirts, Hoop	E. L. Morris	57,169

Invention or Discovery.	Name of Patentee.	No.
Skirts, Hoop	L. H. Foy	57,309
Skirts, Hoop	E. R. Hopkins	60,010
Skirts, Hoop, Clasps for	S. R. Wilmot	58,527
Skirts, Hoop, Clasps for	G. W. Cheesman	52,639
Skirts, Hoop, Clasps for	G. W. Cheesman and C. Durand	54,055
Skirts, Hoop frames for forming	H. S. Loper	58,949
Skirts, Hoop, Attaching clasps to	C. Neumann	54,939
Skirts, Ladies'	D. M. Church	58,336
Skirts, Ladies', Elevator for	C. Grün	58,406
Skirts, Ladies', Supporters for	W. Bacheller	55,196
Skirts, Paper, for ladies	J. H. Hayward	58,641
Skirts, Skeleton	A. J. Colby	52,390
Skirts, Skeleton	S. J. Sherman	53,691
Skirts, Bottom hoops of, Clasps for the	L. W. McFarland	56,146
Skiver Lap	J. S P. Taylor	58,508
Skiving machine	W. S. Atchley	54,664
Slate cleaner	A. W. Overbaugh	60,045
Slate frames	F. Shentor	53,495
Slate frames	D. Cummings, jr	58,225
Slate, Quarrying	J. E. Wootten	58,932
Slate, School and family	J. H. French	60,356
Slate for computation cards, Sliding	G. N. Jackson	56,943
Sleds	S. R. Bowie	52,663
Sleds	F. Peabody	57,959
Sleds, Children's	N. P. Lindergreen	57,344
Sleds, Toy	J. H. Brown	56,358
Sleds for children	J. A. Crandell	52,141
Sleeper, Railway, Iron	F. Vester	53,507
Sleeves and leggings, Attachment for	J. K. O'Neil	54,585
Sleigh knees	M. E. Francisco	56,334
Sleighs	T. W. Porter	55,705
Sleighs	D. J. Bigelow	59,167
Sleighs	D. A. T. Black	59,345
Slicer, Vegetable	J. C. Plumer	54,949
Sliding slate for computation cards	G. N. Jackson	56,943
Slinging arms	O. E. Woods	54,807
Slitting machine	M. H. Merriam and E. L. Norton	55,320
Slop hoppers	J. Marquis	57,742
Sluice for propelling vessels	W. W. Ruthven	53,937
Smoke-consuming heater	G. W. Fair	54,795
Smoke-house, Metallic, Portable	L. S. Stevens	59,931
Smoking device, Tobacco	H. J. Hale	52,564
Smut machines	S. B. Williams	53,720
Smut machines	R. C. Swaun	55,788
Smut machines	A. and G. Smith	57,001
Smut machines	W. G. Wilcox	59,493
Snuffer, Lamp	K. Schon	53,890
Soap	N. R. E. Mayer	53,847
Soap	C. C. Parsons	56,259
Soap	S. J. Beeler	57,663
Soap	S. J. Beeler	60,328
Soap, Composition for making	N. Orcutt	60,041
Soap, Cutting and stamping	H. and A. Phelps	58,473
Soap, Manufacture of	J. T. Ryan	58,302
Soap, Manufacture of	L. H. Van Spanckeren	58,919
Soap, Manufacture of	W. B. Milne	59,724
Soap, Toilet	G. H. Lincoln	56,068
Soap, black lead, and bread, Cutting	W. B. Vincent	52,627
Soap and other purposes, Silicated liquids for the manufacture of	J. T. Ryan	58,303
Social game	M. Bradley	53,561
Socket couplings for gas fixtures	T. L. Reed	56,448
Socket for carriage, Pole iron	U. Reynolds	57,379
Socket joint for oiling tools	Robert Gracey	53,086
Socks, Paper	J. W. B. Covington	52,540
Sod cutters	S. A. Moody	58,951
Soda fountain	E. B. Wright	58,033
Soda fountain	J. W. Cahill	58,375
Soda fountain	W. Coughlin	58,618
Soda fountain, Portable	A. J. Ohmer	52,669
Soda fountain and sirup stand	E. Bigelow	58,205
Soda-water apparatus	C. C. Sheldrake and J. Bready	53,494
Soda-water apparatus, Draught cock for	W. P. Clark	56,709
Soda, &c., Carbonate of, Manufacture of	H. M. Baker	55,600
Soda and potash, Bicarbonate of, and hydrochloric acid	H. M. Baker	57,458
Soda and caustic alkali, Putting up and preserving	T. C. Taylor	52,466
Sofa bedstead	F. Boeger	52,020
Sofa bedstead	J. F. C. Pickhardt	54,592
Sofa bedstead	J. S. Kenyon	56,064
Sofa and crib	E. E. Everitt	55,265
Soil, Tilling the	S. Woodbridge	57,242
Solar mirror for photographic purposes, Arrangement of	W. Crane and W. H. Pease	54,118
Solder casting machine	E. M. Lang	58,728
Solder, Rod, Compressed	L. and R. Crooke	54,120
Solder, Rod, Manufacture of	L. and R. Crooke	54,121

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Solder, Tinners', Melting and Moulding	D. Hagerty	58, 408
Soldering irons	J. H. Trowbridge	53, 545
Sole-edge finishing tool	F. M. Schmitt	60, 563
Sole, Inner	L. Daggett	55, 247
Sole, Inner, for boots and shoes	I. Newhall	52, 737
Soles, India-rubber and leather	L. Elliott, jr	58, 623
Soles, Metal plated	E. Blakeslee	60, 466
Soles, Shoe, Cutting	J. Downing	54, 131
Soles, Water-proof	J. W. Coburn	53, 523
Soles, Water-proof	O. F. Case	59, 357
Solution to be applied to cotton, linen, and other fabrics, to prevent them from burning.	J. McGill	54, 382
Sorghum	J. M. Spencer	53, 696
Sorghum cane stripper	H. B. Wolf	52, 237
Sorghum, Curing	W. Nevins	52, 588
Sorghum evaporator	C. T. and E. W. Moorman	53, 028
Sorghum evaporator	T. Cole	58, 220
Sorghum evaporator	D. T. Miller	58, 869
Sorghum evaporator	H. P. Ninde	54, 196
Sorghum skimmer	W. B. Seward	59, 665
Sorghum stripper	A. P. Stephenson	54, 791
Sorghum stripper	D. H. Nichols	57, 557
Sorghum stripper	D. W. Shares	57, 979
Sorghum stripper	J. D. and I. Hess	59, 220
Sorghum stripper and cutter	C. L. Hart	56, 747
Sorghum, Stripping and cutting	J. Guckian	56, 406
Sorghum and broomcorn strippers	K. W. Doudna	53, 126
Sorting machine	W. H. Merriam and E. L. Norton	55, 331
Sounding apparatus	S. C. and G. L. Morse	56, 436
Sower, Fertilizer	W. H. and J. S. Lakin	52, 295
Sower and drill, Combined	G. W. Hall	57, 707
Sowing plaster, &c.	S. Wheelock	59, 300
Spade handles	C. Dimmick	60, 152
Spade and fork	L. Duvall	53, 127
Spade and rake, Combined	W. H. Miller	59, 050
Spading machines, Rotary	E. J. Frazer	58, 543
Spark arrester	C. B. Keys	55, 669
Spark arrester	C. F. Jauriet	52, 362
Spectacle bows, Joints of	C. Ammidown	54, 273
Spectacle frames	H. Hammond	57, 896
Spectacles	S. Gregg	59, 995
Speculum for uterine diseases	E. M. Bartlett	52, 014
Speculum	C. Lentz	55, 511
Speculum	T. D. Worrall	58, 709
Speed, Changing, Device for	J. H. Wait	53, 202
Spelling, Teaching, Apparatus for	H. Skinner	52, 758
Spice holder	A. J. Walker	57, 414
Spiders	J. Mull and A. D. Reed	58, 460
Spike	L. Kirkup	51, 897
Spike drawers	S. Hurst and J. Douglass	57, 911
Spike extractor	M. E. Bishop	52, 017
Spike pullers	R. A. Fish	58, 626
Spikes	H. Merrill	59, 434
Spikes, Drawing	N. Adams	59, 535
Spikes, Making	A. J. Rogers and W. D. Rinehart	58, 483
Spikes, Making	J. O. Reilley	58, 887
Spikes, Railroad, Drawing	J. Ells	51, 818
Spikes, Rolling	A. J. Rogers	54, 605
Spikes, Split, Making	A. Whittemore	58, 521
Spikes, Tools for making	G. W. Wait	54, 825
Spindle step	A. P. Kinney	59, 037
Spindle for spinning frames	J. E. Atwood	58, 046
Spindles in spinning frames, Driving	J. Sutherland	55, 211
Spindles, Door knobs to, Adjusting	T. Kennedy	55, 115
Spindles, Steps for	C. E. Griffin and T. Marsh	53, 813
Spinning direct from the doffer of carding engines	T. Welham	59, 106
Spinning frames, Flyer boards of	O. Pearl	52, 193
Spinning flyers	B. A. Bailey	57, 065
Spinning, Flyers for	G. Richardson	53, 874
Spinning, Bobbins for	L. Ferguson	54, 465
Spinning hemp, flax, &c., Drawing rollers for	H. Hall	51, 895
Spinning jacks	G. Dawson	56, 532
Spinning machines	W. Eberhard	54, 704
Spinning machines	C. B. Hoard	58, 101
Spinning machines	J. Crowfoot	59, 973
Spinning machines	W. and J. Leach	60, 202
Spinning machines, Hand	T. G. Odell and B. Glover	56, 600
Spinning machines, Hand	H. Koeller	57, 336
Spinning machines, Hand	D. Wilson and H. Fairbanks	58, 015
Spinning machines, Hand	B. A. Grant	58, 023
Spinning machines, Vertical hand	J. Blayney	54, 493
Spinning machines, Bobbins for	C. T. Smith	58, 903
Spinning machines, Rollers for	J. B. Fuller	54, 067
Spinning machines, Stop motion for	L. Cutting	58, 226

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Spinning machines, Ring for ring and traveller	J. Higgins	59, 523
Spinning machines, Ring traveller Cleaners for	W. Jeuckes	55, 662
Spinning metal, Machine for	C. F. Spaulding	54, 621
Spinning machinery, Flyers for	C. Hyde	53, 419
Spinning mules	W. C. Daval	54, 699
Spinning mules	R. Wilde	56, 133
Spinning, Mules for	S. D. Paul	53, 036
Spinning mules and jacks	J. Goulding	56, 922
Spinning tops	E. E. Jones and G. L. Kitson	55, 666
Spirits, Alcohol and other, Manufacture of	J. F. Collins	59, 891
Spirits, Distilling	H. G. Dayton	53, 581
Spirits, Testing, and preventing frauds on the revenue	J. C. Dunlevy	60, 158
Spittoon	F. L. Faulkner	53, 131
Spittoon, Car	W. G. Smith	56, 113
Spittoon for cars	W. G. Smith	55, 729
Spittoon for railroad cars	J. H. Seymour	54, 613
Spittoon for railroad cars	A. H. Wells	59 881
Spittoons for railroad cars	F. H. Furniss	56, 400
Spittoons for railroad cars	J. H. Seymour	59, 820
Splinter bar, Three-horse	J. B. Morrison	59, 053
Splints, Surgical	R. J. P. Goodwin	58, 403
Spoke shaves	J. G. Steiger	53, 698
Spoke shaves	L. Bailey	55, 599
Spoke machines	R. H. Boynton	52, 130
Spokes, Tenoning	O. Van Orman	57, 018
Spokes, Tenoning	J. Lefeber	57, 736
Spokes, Tenoning	J. Letterel	59, 420
Spokes, Wagon, Turning	T. Derrington	57, 099
Spokes in wagon wheels, Driving	E. Keith and D. Bird	59, 612
Spool, Twine and stand	G. P. Goodwin	57, 496
Spools, Darning	J. Greenleaf	52, 643
Spools, Labelling	A. W. C. Williams	56, 312
Spools, Winding sewing-thread upon	W. Weild	51, 907
Sponge, Treating, for stuffing mattresses, &c	R. O. Doremus	59, 714
Spoons, Manufacture of	G. I. Mix	58, 665
Spoons, forks, &c., Manufacture of	D. J. Fleetwood	56, 337
Spoons, Sheet metal	J. Fallows	54, 516
Spouts, Metal, Sheet, Swaging	S. F. Woodworth	53, 515
Spring bedstead	R. Lapham	55, 680
Spring, Bed bottom	D. Punchies	59, 649
Spring for bed bottoms	J. Barnes	52, 658
Spring for beds	L. Smith	55, 021
Spring holder for bed bottoms	R. Lapham	59, 799
Spring, Car	J. B. Smyth	54, 227
Spring, Car	C. French	56, 032
Spring, Car	W. R. Nichols	56, 084
Spring, Car	W. F. Converse	56, 716
Spring, Car	A. H. Roward	58, 677
Spring, Car	C. Glidden	59, 384
Spring, Car, Railroad	A. T. Watson	54, 234
Spring, Door	B. F. Barker	53, 391
Spring, Door	A. Wiswall	57, 240
Spring, Penholder	J. Keith	54, 362
Spring for closing doors	R. T. Knight	59, 414
Spring power for propelling carriages	W. K. Chase	53, 572
Springs, Bed	D. V. Crandall	53, 579
Springs, Bed	N. B. White	56, 132
Springs, Bed, Forming the eyes of	N. B. White	59, 145
Springs, Car	A. Hebard	53, 222
Springs Car	J. J. Gest	53, 291
Springs, Car	J. J. Gest	53, 292
Springs, Car	W. J. F. Liddell	53, 376
Springs, Car	D. Myers	60, 227
Springs, Car, Pneumatic	J. Merlett	51, 956
Springs, Car, Rubber	R. Vose	57, 600
Springs f r railroad cars	J. Murphy	57, 365
Springs, Carriage	M. L. Ballard	53, 556
Springs, Carriage	G. S. Manning	55, 319
Springs, Carriage	B. M. Beckwith	55, 985
Springs, Carriage, Holding	R. Rowell and F. H. Briggs	52, 889
Springs for carriages, &c	A. B. Greenwalt	57, 312
Springs, Clock, Tempering	W. Barnes	59, 943
Springs for clock movements, Equalizing	H. Smith	59, 668
Springs, Coiling	R. Vose and W. Tosach	58, 156
Springs, Corset, Extension	S. H. Barnes	56, 345
Springs, Door	R. Scheidler	59, 082
Springs, Door	J. M. Connel	60, 481
Springs, Door and gate	J. C. Gould	58, 405
Springs, Elastic	S. G. Randall	57, 377
Springs, Hardening	G. G. Crowell	58, 990
Springs, India-rubber, Operating	J. W. Wilder	57, 647
Springs, Manufacture of	J. F. Dubber	60, 157
Springs, Skirt, Forming and Cutting	J. J. Fairbanks	57, 305
Springs, Tempering	B. Whysall and J. Porritt	58, 031

Invention or discovery.	Name of Patentee.	No.
Springs, Upholstery, Attachment for	W. H. Goodall	54,143
Springs, Wagon	C. S. Martin	56,073
Springs, Wagon	C. S. Martin	56,074
Springs, Wagon, Braces for	J. H. Lockie	60,393
Springs, Window-sash	F. Henshaw	54,903
Springs for hat brims	G. Mallory	60,213
Springs for hat brims	S. Peck	60,236
Springs for printing presses, Bed recoil	A. Campbell	56,700
Springs for trusses	J. H. Parker	52,002
Springs, stays, and extensors in wearing apparel	J. L. Newton	56,438
Sprinkler, Street	L. F. Bancroft	53,557
Sprinkler for powdered substances	J. M. Keep	59,406
Sprinkler and dredge	J. M. Keep and S. R. Dummer	56,063
Square and level, Combined	O. R. Chaplin	54,503
Squaring and centring devices	C. O. Gardiner	60,169
Squares, T	A. Bronson	58,056
Squeezers	J. Letzkus	55,513
Stack bottom and feed rack combined	F. F. Fowler	57,115
Stacker, Hay and straw	C. Rundell	54,213
Staging	W. Arronquier	58,571
Stages, Clamps for	W. H. Seymour	52,757
Stair carpet pad	G. W. Chipman	53,573
Stair rod fastening	E. H. Boswell	54,677
Stair rod fastening	W. T. Mersereau	59,921
Stair rods	A. Shipley	53,381
Stair, Spiral	W. Widmayer	52,922
Stair treads, Facing for	O. Snow	53,193
Stairs and rooms, Protector for corners of	H. C. Richards	56,800
Stalks in the field, Cutting	W. F. Starnes	58,909
Stamp, Hand	S. B. Brague	52,666
Stamp, Hand	S. B. Brague and W. S. Starr	52,668
Stamp, Hand	G. E. Woodbury	59,497
Stamp moistener	H. A. Hoyt	58,420
Stamping heads	P. W. Gates	52,641
Stamping chain links, Machines for	P. S. Bishop	54,101
Stamping machinery, Shoe for	P. W. Gates	56,321
Stamps, Hand	B. B. Hill	59,395
Stamps, Marking	W. B. Mason	60,532
Stamps, Numbering	D. Emonnot	55,078
Stamps, Postage and revenue	W. C. Wyckoff	53,723
Stamps, Postage, Paper for	H. Loewenberg	53,081
Stamps for marking sheep	A. Todd, jr	60,439
Stamps and hammers, Operating	C. R. James	55,772
Stanchion	L. S. Safford	59,662
Stanchions for cattle	J. B. Crowell	59,190
Stand, Dish	J. W. Lamb	52,576
Stand, Gas, Portable	B. Allen and J. Riddell	55,447
Stand and mirror	W. H. Hughes and W. L. Lent	57,723
Stand and spool, Twine	G. P. Goodwin	57,496
Staples	B. Boardman	54,283
Staples for wire fence, Holding and driving	A. C. Betts	56,884
Starch, size, &c., Preparing	J. Briggs	56,356
Stave-cutting machine	J. Bell	56,883
Stave jointers	J. F. Sayer	57,387
Stave machines	J. R. Winfield and W. S. Colwell	53,211
Stave machines	A. H. Hook	53,618
Stave machines	T. Cheshire	53,784
Stave machines	C. Murdock	55,695
Stave machines	J. J. Ralya	55,708
Stave machines	J. C. Cook	59,821
Staves, Bending	C. B. Hutchinson	53,983
Staves, Chamfering and crozing	C. B. Hutchinson	53,982
Staves, Jointing	A. Casebeer	55,238
Staves, Sawing	C. J. Holman	51,896
Stays, springs, and extensors in wearing apparel	J. L. Newton	56,438
Steam	M. Fletcher	56,396
Steam blower	J. Simmonds	53,087
Steam, Condensing	F. Murgatroyd	56,784
Steam, Decomposing	J. McGeary	59,246
Steam, Generating	E. S. Hutchinson	58,727
Steam superheater	L. V. Fichet	52,982
Steam, Superheating	N. Brown and H. B. Gregg	51,796
Steam, Superheating, Cast-iron apparatus for	C. C. Parsons	54,590
Steam, Utilizing	J. M. Brosius	55,810
Steamer, Culinary, for boilers	F. W. Bacon	57,244
Steel, Casting	A. Lohage	55,442
Steel, Making	T. H. Jenkins	53,625
Steel, Manufacture of	S. W. Kirk	53,307
Steel, Manufacture of	A. L. Fleury	56,026
Steel, Tempering	C. B. Cottrell	55,004
Steel, Tempering	C. Manning	57,349
Steel, Welding and refining	P. B. Laird	53,010
Steel, Iron into, Converting	E. Savage	52,796
Steel and iron, Coating, with gold, silver, &c	J. B. Thompson	58,037

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Steel and iron, Manufacture of	W. Gerhardt	52, 559
Steel and iron, Manufacture of	W. Gerhardt	52, 560
Steel and iron, Refining	J. Absterdam	52, 121
Steel and iron, Rolling	J. S. Seaman	57, 388
Steel and iron, Uniting	W. and W. N. Terwilliger and J. S. Lockwood.	56, 680
Steel and iron, Welding	J. P. Price	60, 420
Steel and iron, Combined, Manufacture of articles of	W. M. Pickslay	59, 644
Steel and iron, Welding, puddling, and brazing, Flux for	A. J. Hindermeyer	60, 516
Steel and wrought iron, Manufacture of, direct from the ore	W. Henderson	60, 002
Steel and other metal, Annealing	E. Savage	52, 612
Steel for safes, Manufacture of	W. K. Marvin	53, 640
Steel-facing vices, Process for	T. S. Norton	52, 878
Steerer and propeller for boats, Portable	T. Reece	59, 074
Steering apparatus	M. W. Ruthven	53, 934
Steering apparatus	W. O. Jones	53, 988
Steering apparatus	E. A. Turner	51, 824
Steering apparatus	S. M. Dumont, F. Dupraz, and J. Dickason.	55, 257
Steering apparatus	J. Van Densen	55, 559
Steering apparatus	E. Rowse	56, 802
Steering apparatus	F. P. Duprasy, S. M. Dumont, and J. Dickason.	58, 791
Steering apparatus	R. Sparks	60, 276
Steering apparatus	S. L. Walkinshaw	60, 295
Steering apparatus, Hydraulic	H. O. Cook	52, 970
Steering and turning apparatus for vessels	C. G. Forshey	55, 080
Stencil plate	J. Wentz	52, 234
Stencil numbering apparatus	J. M. Merritt	56, 674
Step block for carriages	P. F Hulbert	53, 302
Step for upright shafts	A. G. Hamaker	59, 594
Stereoscope	A. Qnirolo	52, 744
Stereoscope apparatus	H. Swan	51, 906
Stereoscope, Convertible	W. H. Jacoby	56, 944
Stereoscopes	A. Beckers	55, 044
Stereotype blocks	A. Case	54, 110
Stereotype plates, Setting type in making	J. Paulding	52, 073
Stitched, Holding rolled work while being	W. M. McCoy	58, 117
Stick, Developing	T. C. Roche	52, 748
Still for petroleum	P. H. VanderWeyde	53, 062
Still, Apparatus to be attached to, to prevent fraud	W. J. Walker	59, 688
Stills	B. P. Stebbins	60, 079
Stills, Apparatus to be attached to, to prevent fraud	W. J. Walker	60, 294
Stills for distilling salt water	N. W. Wheeler	52, 476
Stills for petroleum	A. Lapham	59, 317
Stills, engines, &c., Hydrocarbon burner for	I. Helme	59, 393
Stirrup	B. T. Nichols	52, 589
Stirrup	F. N. Martin	54, 380
Stock, Marking	G. W. Devin	54, 127
Stock yard	A. Morley	56, 249
Stocking-heel protector	S. J. Baker	54, 094
Stocking, Knitted, Machine-made	A. C. Carey	54, 109
Stone, Artificial	A. Casady	52, 386
Stone, Artificial	W. Kirrage	55, 969
Stone, Preparing, for power printing	N. M. Buffington	54, 499
Stone, Sawing	S. Sherman	57, 586
Stone-dressing machine	J. Armstrong	53, 940
Stone-sawing machine	F. S. Packard	59, 747
Stone cement and plaster, Manufacture of	F. Ransome	55, 545
Stones, Artificial, for grinding and polishing	H. Von Unwerth	54, 628
Stones, Artificial, for grinding and polishing, Forming	W. Tanner, I. I. and J. W. Hyatt, jr	53, 056
Stones, Channelling	A. T. Merriman and T. Ross	59, 856
Stone, &c., Drilling and quarrying	E. G. Lamson	58, 435
Stones in jewelry, Setting	F. Stefani	58, 501
Stool, Camp	C. G. Herbert	52, 412
Stool, chair, and cradle	J. B. Warren	55, 401
Stools, Music, Attaching legs to	E. D. Castelow	53, 571
Stool, Piano	W. A. Ingalls	54, 551
Stool, Piano	J. Briggs	58, 979
Stool and table	H. Loth	56, 769
Stools, Back for, Adjustable	T. J. Ross	59, 457
Stools, Screws for	W. A. Ingalls	54, 733
Stop-cocks	C. C. Parsons	55, 700
Stopper for bottles	L. B. Myers	53, 655
Stopper for bottles	F. Miller	57, 356
Stopper for ink bottles	M. Ames	53, 390
Stopper for fruit jars	W. W. Lyman	51, 844
Stopper for jars and bottles	T. O. Oliver	53, 659
Stopper, Decanter, Self-acting	L. Loeffler	55, 124
Stoppers for oyster kegs, Removing	S. Swartz	54, 039
Stopple, Measuring, for canisters	W. M. Smith	58, 311
Store shelf and rack	J. Guilliford	53, 441
Stove, Coal	N. A. Boynton	55, 997
Stove, Coal	J. S. Marsh	59, 775
Stove, Coal-oil	E. McKinney	58, 862

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Stove, Cooking	D. Heileg	54, 72
Stove shelf and rack	J. Gulliford	53, 44
Stove, Cooking	S. Smith	58, 493
Stove, Cooking	D. Graves	58, 638
Stoke, Cooking	W. Wilson	58, 705
Stove, Cooking	J. P. Broadmeadow	59, 351
Stove, Cooking	G. W. Walker	60, 446
Stove, Cooking	M. D. Wellman	60, 602
Stove, Cook, Gas or petroleum, Portable	H. E. Smith	51, 976
Stove, Foot	M. B. Wright	54, 808
Stove or gas heater, Coal-oil	C. A. Harper	59, 766
Stove, Heating	J. C. Cochrane	52, 535
Stove, Heating	A. N. Beach	54, 814
Stove, Heating	L. Lakin and N. Hall	54, 924
Stove, Heating	G. R. Moore	54, 938
Stove, Heating	D. M. Cummings	56, 015
Stove, Heating	T. White	56, 649
Stove, Heating	G. Moody and W. P. Hall	56, 979
Stove, Heating	E. N. Cummings	58, 782
Stove, Heating	L. Bridge	60, 132
Stove, Hydrocarbon	A. J. Griffin	52, 246
Stove, Gas	H. Pennie and E. A. Leland	56, 677
Stove, Gas, for heating	D. G. Haskins	55, 652
Stove, Laundry	H. Squyer	53, 697
Stove, Petroleum	O. F. Morrill	55, 032
Stove, Soapstone	J. H. Flagg	54, 319
Stove for dentists	S. P. Hildreth	58, 822
Stove for railroad cars	H. G. Dayton	54, 872
Stove for railroad cars, Ventilating	R. Eaton	54, 830
Stove and drum	G. D. Greenleaf	58, 811
Stove cover lifter	C. H. Porter	57, 373
Stove cover lifter	J. C. Longshore	59, 131
Stove cover, pot, and pan lifter	J. B. Oakey	59, 038
Stove cover and culinary vessels, lifter for	J. Old	55, 894
Stove covers, &c., Lifter for	S. Maltby and J. R. Brown	58, 442
Stove cricket	F. Bowman	59, 814
Stove dampers	G. W. Walker	55, 751
Stove pipe damper	R. S. Sanborn and W. Bennett	53, 886
Stove pipe damper	S. Marvin	53, 925
Stove pipe damper	S. R. Nye	54, 197
Stove pipe damper	D. and S. Sweeney	54, 976
Stove pipe damper	E. Parker	55, 017
Stove pipe damper	M. Hicks	55, 101
Stove pipe damper	B. F. Cowan	56, 379
Stove pipe damper	J. A. Jacobs	56, 566
Stove pipe damper	W. H. Nutting	56, 789
Stove pipe damper	R. M. Breckenridge	56, 891
Stove pipe damper	B. F. Miller	56, 975
Stove pipe damper	H. Ogborn and A. T. Chapin	57, 368
Stove pipe damper	R. S. Miller	57, 544
Stove pipe damper	N. D. Eldred	58, 233
Stove pipe damper	B. I. Harris	58, 251
Stove pipe damper	C. R. Everson	60, 160
Stove pipe damper	J. Frazer and O. S. Garretson	60, 498
Stove pipe and damper	L. R. Comstock	59, 362
Stove pipe drum	H. B. Northup and J. H. Patterson	52, 366
Stove pipe drum	J. P. Chaplin	52, 966
Stove pipe drum	T. R. Cook	53, 789
Stove pipe drum	M. Gage	53, 806
Stove pipe drum	J. Crimmins	53, 594
Stove pipe drum	F. P. Hunt	54, 911
Stove pipe drum	W. Kroeger	55, 419
Stove pipe drum	H. G Whitaker	55, 939
Stove pipe drum	C. C. Webber	56, 473
Stove pipe drum	B. F. Miller	56, 774
Stove pipe drum	F. E. Ruth and J. E. De Long	57, 572
Stove pipe drum	H. H. Senuiksen	57, 778
Stove pipe drum	E. S. Blake	59, 173
Stove pipe drum and oven	J. Beebe	53, 077
Stove pipe drum, Revolving	L. R. Comstock	59, 363
Stove pipe drum or heat radiator	F. A. Balch	56, 514
Stove pipe elbow	J. Wilson	60, 453
Stove pipe elbows and dies for producing the same	F. Boshert	52, 520
Stove pipe stop	W. Chappell	56, 707
Stove pipe thimble	J. F. Severance	55, 210
Stove pipe thimble	C. H. Fitch	55, 268
Stove pipes, heat radiating attachment to	N. E. Cornwall	59, 971
Stove pipes, heat radiator for	E. Detwiller	60, 490
Stove pipes and water conductors, Connecting the joints of	E. Johnson	54, 555
Stove and furnace doors, Dust screen for	J. Reynolds	52, 604
Stoves	F. E. Adam	53, 252
Stoves	J. A. Talpey	53, 503
Stoves, Base burning	D. G. Littlefield	53, 995
Stoves, Base burning	J. Van Worner and M. McGarvey	54, 447

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Stoves, Base burning	N. A. Boynton	58, 582
Stoves, Coal	J. Ekin	51, 816
Stoves, Coal	J. D. Conner	52, 033
Stoves, Coal	W. H. Gandey	54, 526
Stoves, Coal	J. W. Paige	56, 148
Stoves, Coal	H. G. Dayton	59, 563
Stoves, Cooking	J. Spear	53, 497
Stoves, Cooking	J. B. Crowley	53, 732
Stoves, Cooking	S. Pierce	54, 400
Stoves, Cooking	A. C. Barstow	55, 225
Stoves, Cooking	G. Chilson	55, 466
Stoves, Cooking	E. Bnssey	56, 525
Stoves, Cooking	E. Bussey	56, 686
Stoves, Cooking	J. Chambers	58, 061
Stoves, Cooking	S. G. Piper	60, 054
Stoves, Cooking	F. M. Baker	60, 118
Stoves, Cooking, Ash sifting device for	E. Mingay	55, 587
Stoves, Cooking, Attachment to	R. J. Rathbun	56, 266
Stoves, Cooking, Water reservoirs for	E. Bussey	57, 060
Stoves, Cooking, and ranges, Braziers for	N. O. Bond	55, 519
Stoves, Damper or draught regulator for	S. Oppenheimer	60, 412
Stoves, Foot	M. Mellinger	60, 032
Stoves, Handles for	J. U. Moeller	58, 279
Stoves, Heating	S. Smith	54, 031
Stoves, Heating	L. Bridge and G. W. Ruby	54, 102
Stoves, Heating	W. Vande Sande	54, 233
Stoves, Heating	W. H. Harbaugh	54, 532
Stoves, Heating	S. Smith	55, 728
Stoves, Heating	W. Resor	58, 477
Stoves, Hot water reservoir for	J. B. Crowley	59, 894
Stoves, Gas	A. M. Lesley and W. Craig	52, 299
Stoves, Gas	A. M. Lesley and W. Craig	52, 300
Stoves, Parlor, Top for gas heating	W. S. Walker	60, 598
Stoves, Vapor	S. Child, jr	56, 530
Stoves, Vapor	S. Child, jr	57, 288
Stoves, Vapor burning	O. K. Collins and W. B. Grover	60, 480
Stoves and heaters, Ventilating pipes for	A. A. Wilder	58, 159
Stoves, tea-kettles, &c., Hinging covers to, Attaching	D. G. Littlefield	53, 250
Strainer, Milk	N. A. Wright	59, 885
Strainer and press for cream, paste, &c	L. Bishop	52, 661
Strap, Hitching	J. Dubree	56, 537
Strap for street railway cars, Extension holding	T. Coggswell	53, 116
Strapping blocks	A. G. Wolf	59, 496
Straps for garments, Elastic	J. W. Boughton	60, 131
Straps and buckles, Metallic fastenings for	M. H. Mansfield	58, 657
Straw, Pressing	E. T. Ford	52, 838
Straw, flax, and hemp, Treating	T. Gray	60, 177
Straw, flax, &c., Straightening, breaking, and cleaning	S. A. Clemens	59, 501
Straw, palm leaf, &c., Bleaching	F. Perrin	56, 860
Straw, Paper pulp from, Preparing	J. Priestly and T. C. Bradbury	55, 706
Straw into boilers, Packing	H. B. Meech	57, 947
Straw, wood, &c., for the manufacture of paper pulp	H. L. Jones and D. S. Farquharson	55, 418
Straw from threshing machine, Elevating	G. Vedder	54, 449
Street sprinkler	L. F. Bancroft	53, 557
Street washers	J. McClelland	58, 857
Streets, Levelling	L. Von Froben	52, 915
Stretcher	C. H. Tomkins	57, 013
Stretcher, Boot and shoe	W. Frederick	55, 637
Stretcher, Canvas	C. Dowd	55, 579
Stretcher, Couch	J. E. Jouett	59, 403
Stretchers, Artists'	J. E. Todd	58, 154
Stripper and cutter, Corn stalk	N. Gabel	52, 282
Stubble and weeds, Burying, while ploughing	J. W. Beer and J. B. Wampler	57, 279
Studs, Initial, Manufacture of	A. W. Overbaugh	56, 791
Stuffing for currying, Preparing	C. L. Morehouse	55, 426
Stump extractor	J. Crowner	52, 271
Stump extractor	W. Dickerson and H. O. Wilber	53, 125
Stump extractor	N. Parrish	54, 398
Stump extractor	L. C. English	58, 235
Stump extractor	A. Monroe	59, 624
Stump extractor	I. Flanders	59, 904
Stump extractors	A. Palmer and R. Gilleland	55, 156
Stump extractors	W. Langdon	55, 314
Stump extractors	J. W. Blodgett	55, 809
Stump extractors	N. M. Healy	60, 372
Stump and grub machine	A. McKenney	54, 000
Stump or stone extractor	J. H. Green	53, 294
Submarine explorer	W. Mont Storm	54, 438
Substances, Aerating and mixing, Apparatus for	E. L. Pratt	59, 449
Substances, Impregnating, with preservative material	E. Sabathe and L. Jourdan	58, 036
Sugar cane, Treating	J. C. Bell	57, 465
Sugar, Cube, Making	L. W. Boynton	52, 956
Sugar, Draining, Centrifugal machine for	R. Hasket and W. B. Cox	59, 598
Sugar, Draining, Centrifugal machine for	J. R. Brown	59, 956

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Sugar, Draining and cleaning, Centrifugal machine for	C. O. West and J. Carey	54,456
Sugar, Granulating and drying	J. Hanford	58,098
Sugar, Manufacture of	T. Lespes	52,424
Sugar, Sorghum	F. M. Chalfant	59,183
Sugar and Syrup, Maple-flavored	C. McLean	56,673
Sugar in sugar refineries, Stirring and dissolving	T. H. Quick	54,597
Sugar from corn, Manufacture of	A. H. Hirsh	58,824
Sugar, salt, &c., Evaporating solution of	O. Macdaniel	54,746
Sulkies	J. G. Reiff	59,452
Sulpho-acetate of alumina	G. T. Lewis	59,239
Sulphur duster	J. W. Clark	56,711
Sulphur, Manufacture of	L. A. C. St. Paul De Sincay	59,328
Sulphur, Refining	R. Oxland	54,586
Superheater, Steam	L. V. Fitchet	52,982
Superheating apparatus	I. Newton	54,757
Supporters, Abdominal	E. Dexter	55,252
Supporters, Uterine	F. Reichenback	52,076
Supports, Hop vine	N. C. Roberts and E. W. Badger	57,381
Surcingle	D. P. Rood	58,139
Surgical splints	R. J. P. Goodwin	58,403
Suspenders	A. Woodard	57,426
Suspenders	J. B. Sharp and R. M. Seymour	59,465
Swage for sharpening saw teeth	J. E. Emerson	55,262
Swaging machine	J. H. Tobey	55,794
Sword and pistol, Combined	A. Rauh	52,502
Sweat linings into hats, Sewing	R. Eckemeyer	58,623
Sweeping, machine, Street	J. Miller	52,870
Swing	J. F. Hartmau	53,938
Swing power	W. Valentine and T. C. Longton	59,878
Switch, Railroad	J. W. Zinn	53,213
Switch, Railroad	T. B. Purves	54,770
Switch, Railroad	J. Bradt and J. Hayes	55,456
Switch, Railroad	W. J. Stowell	55,736
Switch, Railroad	J. A. Williamson	55,943
Switch, Railroad	R. V. Jones	56,060
Switch, Railroad	T. S. Mitchell	56,432
Switch, Railroad	H. Maxell, D., and H Fessler	57,744
Switch, Railroad	A. Hartman	58,818
Switch, Railroad	S. T. Denise	60,487
Switch, Railway	W. J. Stowell	53,357
Switch, Railway	S. A. Emery and F. A. Prince	53,593
Switch, Railway	P. Quinn	53,674
Switch, Railway	J. E. P. Doyle	54,513
Switch, Railway	C. H. Sawyer	55,913
Switch Railway	C. J. Bayer	57,661
Switch, Transfer	H. Willard	55,494
Switch stand for railroads	C. E. Byers	54,855
Switch for replacing cars upon track	N. Pullman	54,478
Switch and frog for railways, Combined	P. Quinn	53,675
Switches for street cars	J. A. Heyl	53,822
Swivel shackle	T. B. Roche	55,162
Syphons	J. M. Naglee	56,597
Syphons	E. I. Stearns	58,316
Syrup, Compound	C. Birdsall	54,492
Syrup, Cough	C. Benedict, jr.	54,098
Syrup, Filter for	P. and H. A. Perdew	58,472
Syrup stand and soda fountain	E. Bigelow	58,205
Syrup from corn, Making	H. J. Deissner	55,629
Syrup and sugar, Maple flavored	C. McLean	56,673
Syringes, Elastic bulb	H. D. Lockwood	57,933
Syringes, Female	S. M. Landis	60,526
Syringe, Vaginal	S. E. Parsons	55,355
Syringes for gardens, Sprinkling	A. L. Jewell	56,757
Syringes, bottle stoppers, caster wheels, pistons, &c., Manufacture of.	R. B. Hugunin	53,002

T.

Table	T. B. Stout	56,632
Table	E. L. Staples	57,209
Table	E. Dinter	58,995
Table, Carving	R. E. Dean	58,387
Table, Centre	E. Lampman	60,525
Table cover	A. L. Munson	54,390
Table, Distributing	G. Whitaker	59,883
Table, Extension	F. R. Osgood	51,855
Table, Extension	W. Bedle	53,774
Table, Extension	G. Lauter and J. Kautz	57,927
Table, Extension	J. B. Curtis	59,367
Table, Folding	F. Mohr	54,386
Table, Folding	G. W. Nellis	58,462
Table, Revolving	P. Barrett	59,341
Table, Sewing	W. L. Lance	55,677
Table, Sewing, for bookbinders	M. T. Lincoln	59,240
Table, Shaking	W. B. Frue	58,806

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Table, Shearing and sheep-holder	S. L. Sage	54,023
Table, Sheep shearing	W. R. Elder and O. T. Baker	53,425
Table, Ships'	I. H. Stoddard	56,117
Table and bedstead	S. S. Burr	60,339
Table and chair, Baby	J. Kopp	60,389
Table and holder for shearing sheep	A. M. Culver	58,991
Table and safe, Provision	J. S. Robinson	53,877
Table and settee	E. Fowler	54,140
Table and stool	H. Loth	56,769
Table-leaf support	G. Fyfe	55,846
Table-leaf support	L. R. Cavender	56,005
Table mat	C. Webber	55,402
Table stand for food	B. F. Porter	57,964
Tables, Billiard	P. Schouller	53,721
Tables, Billiard, Attachment for the legs of	W. B. Sounneillian	58,313
Tables, Billiard, Cushion for	L. Decker	60,657
Tables, Joints for frames and legs of	S. Oppenheimer	56,986
Tables, Tops and leaves of, Jointing	F. B. Marble	53,018
Tables for concentrating ores	H. A. Thompson	60,089
Tablet, Pocket	J. A. Minor	56,776
Tack extractor	F. M. Osborn	59,059
Tack and nail machine	N. and N. W. Leonard	58,154
Tackle block	G. Milsom	52,874
Tackle block	J. Briggs	60,614
Tackle block sheave	J. W. Norcross	56,087
Tackle blocks for hay elevators	F. Wicks and F. F. Fowler	57,610
Tackle, Fishing	W. D. Chapman	54,684
Tackle and block check	D. C. Guttridge and W. F. Rogers	57,316
Tackle for raising and lowering boats	W. A. Devon	57,877
Tackle for raising sunken whales and other bodies	T. W. Roys	53,684
Tacks, Capping	J. C. Rhodes	56,268
Tacks, Leathering	W. H. Field	59,203
Tacks and nails	R. Speer	56,114
Tacks and nails, Making	O. L. Basset, T. R. Bearse and W. B. Wilber.	58,577
Tag or label	G. W. Storer	59,678
Tags	C. A. Moore	60,406
Tags, Metal loop for	S. B. Fay	60,624
Tags or labels for express companies	E. A. Locke and L. Henser	55,879
Tail-boards, Self-locking	S. Walker	52,230
Tallow, Rendering	J. J. Eckel and I. S. Schuyler	57,104
Tallow, &c., Rendering	J. J. Eckel and I. S. Schuyler	57,103
Tallow, lard, &c., Rendering and bleaching	J. S. Shapter	60,575
Tallying machine, Grain	A. Harter	59,217
Tank, Petroleum	P. Jacovenco	53,970
Tank, Water, Self-feeding	R. S. Pickett	54,009
Tank for petroleum	M. C. C. Church	57,479
Tank for preparing peat	A. Betteley	51,913
Tanks, Oil	J. K. Ingalls	53,829
Tanks, Oil, Construction of	T. C. Joy	58,648
Tanks for oil, &c., Portable	J. F. Keeler	53,451
Tanks, Railroad, Elevating water into	C. L. Stevens	57,211
Tanks for containing and transporting petroleum	W. C. Allison	58,746
Tanners' waste, Utilizing	C. Goty and A. Guillemin	57,252
Tanning	J. Schultz	53,688
Tanning	M. W. Page	54,588
Tanning	J. N. Sturtevant and H. E. Jones	57,795
Tanning	G. D. Wheelock	59,109
Tanning	A. Hill	60,066
Tanning	I. Wood	60,108
Tanning	J. W. Calef	60,472
Tanning	J. G. Johnston	60,524
Tanning	J. A. Pease	60,548
Tanning	J. A. Pease	60,549
Tanning, Apparatus for	T. Sharp	51,870
Tanning, Apparatus for	A. Appleby	59,157
Tanning, Process for	G. W. Hersey	58,643
Tanning hides and skins	B. Picard	52,655
Tanning matter from bark, Extracting	N. S. Thomas	57,218
Tanning and preparing hides	B. F. Taber	52,464
Tap, Expanding	G. A. Ohl	52,068
Tap and reamer, Expanding	B. T. Loomis	53,996
Taps and dies	F. S. Gregg	57,124
Tar, Burning	R. Yeilding	54,243
Tar and other substances, Distillation of	L. S. Fales	52,151
Tassel hook	A. D. Judd	52,857
Tatting shuttle winder	J. D. Moore	60,407
Teaching spelling, Apparatus for	H. Skinner	52,758
Teapot	R. Carter	56,367
Tea and coffee pots	P. G. H. Schæffer	55,720
Tea and coffee pots	L. A. Plumb	57,372
Teeth, Artificial	E. P. Hoyt	52,290
Teeth, Artificial	S. R. Screven	52,326
Teeth, Artificial	J. Guttman	52,993

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Teeth, Artificial	F. W. Smith	60,583
Teeth. Artificial, Attaching to bases	S. W. Stockton	57,793
Teeth, Artificial, Plates for	G. H. Hurd	57,725
Teeth, Cutting. Instruments for	E. Bourquard	58,186
Teeth, Rake, Horse	C. Coleman	52,680
Teeth, Rake, Horse	A. B. Sprout	54,430
Teeth, Saw, Filing	M. M. Pettes	60,237
Teeth, Temple, Tool for setting	W. W. Dutcher	59,984
Teeth of machines for picking cotton	B. M. Smith	54,619
Telegraph cables	S. T. Field	53,430
Telegraph cables	J. N. Phelps	59,318
Telegraph insulators	W. W. Waddell	53,201
Telegraph insulators	A. B. Ely	51,934
Telegraph insulators	W. W. Smith	53,246
Telegraph insulators	A. B. Ely	53,426
Telegraph insulators	A. B. Ely	53,427
Telegraph repeaters	C. H. Rudd	55,541
Telegraph sounders	E. Wilson	57,032
Telegraph, Ocean	G. W. Bowlsby	52,522
Telegraphic cables	P. A. Salvotti	53,047
Telegraphic cables	J. Story	53,700
Telegraphic wires, Insulating	A. B. Ely	51,935
Telegraphs, Electric	J. Blackie	56,886
Telegraphs, Electric	A. Chace	57,673
Telegraphs, Electro-chemical	A. F. Park	56,988
Telegraphs, Electric, Signal codes for	F. J. Bolton	58,562
Telegraphs, Hydro-pneumatic, for hotel annunciators	G. G. Percival	51,858
Telegraphs, Sounding	E. Wilson	52,481
Telegraphs, Line wires for	M. G. Farmer and G. F. Milliken	59,763
Telegraphs, Punching paper for	E. A. Calahan	55,056
Tender and scrubber	A. H. Allison	54 482
Tenoning machines	W. Pruett	56,445
Tenoning machine	H. B. Smith	52,219
Tenoning machine	L. Mason	54,749
Tenoning machine	D. Evers	59,826
Tenons, Tools for making	D. H. Stephens	59,472
Terraspheres	E. Root	60,642
Tether	H. L. Folsom	56,028
Tethering-halter attachment	E. Howe	54,729
Textile fabrics, Composition for cleaning and scouring	G. E. and E. L. Rolland	53,244
Thill, Carriage	B. L. Wood	57,809
Thill couplings	A. and G. Woeber	55,191
Thill couplings	A. and G. Woeber	55,192
Thill couplings	W. Morely	52,187
Thill-holding loop	J. W. Dann	57,294
Thills, Carriage, Bending	J. Howarth	52,170
Thills, Carriage, Coupling for	H. L. Taylor	58,353
Thills, Cutter, Shifting	J. G. Perry	53,478
Thills and poles for carriages, &c	W. R. S. Hunter	53,828
Thills to carriages, Attaching	M. J. Althouse and P. Reifsnider	59,537
Thills to carriages, Attaching	F. McCoy	54,574
Thills to vehicles, Attaching	J. P. Smith	53,694
Threshing machines	N. Palmer	53,860
Threshing machines	J. H. Melick	57,541
Threshing machines	A. B. Crawford	58,338
Threshing machines	E. D. Street	59,291
Threshing machines	J. and E. C. Nichols and D. Shepherd	59,440
Threshing machines	G. Vedder	54,449
Threshing machines, Elevating straw from	G. W. Carpenter	59,555
Threshing machines, Feed apparatus for	C. F. Duvall	57,882
Threshing machines, Side gear for	L. B. Hubbell	52,048
Threshing machines, Gearing for	M. H. Mansfield	56,583
Threshing and hulling clover	M. Williams	53,370
Threshing and winnowing machine	W. Weild	51,907
Thread, Sewing, Winding upon spools	J. Davies	60,148
Thread or yarns previous to weaving, Treating	S. Vigoureaux	54,271
Threads, Preparing for parti-colored printing, and for properly weaving the same.	T. Kohn	58,434
Threads, Silk and other, Twisting, stretching, cleansing, and reeling.	R. Kershaw	58,836
Threads, Variegated	C. Mahon	59,618
Ticket holder	W. T. Cushing	55,201
Tickets, Railroad, Printing	I. H. Merritt	53,851
Tie, Cotton-bale	J. Booth	54,675
Tie, Cotton-bale	W. Onions	55,353
Tie, Cotton-bale	W. Onions	59,443
Tie, Cotton-bale	J. McMurtry	58,445
Tie for cotton bales	C. W. Wailey	58,698
Ties, Cotton	M. A. Tarleton	59,293
Ties, Cotton	J. F. Milligan	59,512
Ties, Cotton	J. W. Heddenburg	60,187
Ties, Cotton	Z. W. Lee	58,844
Ties, Cotton-bale	J. H. Gridley	59,007
Ties, Cotton-bale		

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Ties, Cotton-bale	G. A. Seaver	59, 141
Ties, Cotton-bale	C. Swett	59, 144
Ties, Cotton-bale	J. J. McComb	59, 152
Ties, Cotton-bale	R. G. Latting	60, 528
Tiles, &c., Manufacturing	W. Boulton and J. Worthington	56, 504
Timber, Moving	H. Hochholzer and F. Denver	59, 605
Timber, Preserving	F. Ransome	55, 216
Timber for cutting into veneers, Preparing	T. Hanvey	53, 610
Timepieces	H. J. Holden	53, 146
Timepieces, Escapements for	S. W. Robinson	59, 658
Tin, Folding	C. H. Raymond	54, 599
Tin-can opener	E. T. Orne	53, 173
Tinners' edging tools	W. H. Henderson	54, 342
Tinners' forming tools	W. H. Henderson	54, 341
Tip to boots and shoes, Securing	H. T. Jennings	53, 150
Tire machines	G. T. Ridings	56, 269
Tire-heater, Rotary	G. T. Ridings	56, 270
Tire shrinker	J. P. Howell	54, 165
Tire shrinking	H. W. Caswell	57, 475
Tire-bending machine	D. Ballou	55, 224
Tire-shrinking machine	G. Huntington	57, 141
Tire-shrinking machine	T. Tully	57, 410
Tire-shrinking machine	T. Pratt	59, 067
Tire tightener	P. Daniels	53, 957
Tire-upsetting machine	C. Baer	57, 034
Tire, Wagon, Upsetting	E. Shopbell	51, 872
Tires of wheels, Tightening the	D. J. Kirkman and E. K. Gray	59, 409
Tires of wheels, Tightening the	F. B. Morse	60, 639
Tires, Upsetting	A. Stow	55, 735
Tires, Upsetting	L. W. Loomis	58, 111
Tires, Wagon, Tightening	G. Hillegass	54, 159
Tires, Wagon, Upsetting	E. Cook	55, 199
Tires of wheels, Instrument for measuring	J. Foster	56, 546
Tires to wheels of locomotives, Attaching	E. Mellon	58, 447
Tobacco cutter and nut-cracker	H. Tilden	55, 177
Tobacco-cutting machine	F. W. Ritterhoff	52, 747
Tobacco-cutting machine	J. I. Robbins	54, 017
Tobacco, Cutting	D. T. Robinson	54, 210
Tobacco, Cutting	L. F. Hildebrand	59, 015
Tobacco, Cutting, Fine	E. Holmes	55, 861
Tobacco, Plug	J. Blackie	53, 105
Tobacco, Pressing	J. Blackie	57, 280
Tobacco, Pressing	W. H. Watson	57, 800
Tobacco, Pressing	W. H. Watson	59, 488
Tobacco, Pressing	W. H. Watson	60, 100
Tobacco-smoking device	H. J. Hale	52, 564
Tobacco, Smoking, Cutting	H. M. Smith	55, 173
Tobacco, Treating	S. C. Dawson	52, 976
Toggle and watch key, Combined	R. Cross	52, 686
Toggle, watch key, and tooth-pick, Combined	R. Cross	52, 687
Toilet cases, Pocket	F. F. Braillard	52, 669
Tongs, Butter	J. S. Clark	56, 904
Tongs, Clothes	J. T. Bever	55, 991
Tongs, Gas-pipe	D. Bannister	54, 278
Tongs, Pie or plate	A. Lawrence	53, 227
Tongs, Pipe	J. Moulton	52, 065
Tongs, Pipe	R. Cox	54, 694
Tongs, Pipe	A. G. Page	54, 820
Tongs, Pipe	H. Herbert	57, 506
Tongs, Pipe	M. H. Freeman	59, 582
Tongs, Smiths'	J. C. Gardner	55, 275
Tongs and poker	J. Blair	59, 547
Tongs and poker, Combined	S. D. Yerks	57, 431
Tongs, poker, wrench, &c., Combined	J. Richards	60, 556
Tongs and shovel	R. D. Bradly	56, 169
Tongs and shovel, Combined	H. Ogborn	52, 590
Tongs, Blacksmiths', and drill, Combined	F. Nevergold and G. Stackhouse	55, 696
Tool	J. A. Smith	59, 866
Tool, Finishing, Sole edge	F. M. Schmitt	60, 563
Tool, Grappling	N. W. Green	60, 361
Tool handle	C. W. Bioren	59, 757
Tool holder	F. T. Cerdis	56, 377
Tool holders for dentists	G. F. Foote	54, 882
Tool, Improved	B. Boardman	56, 166
Tool, Improved	C. Richmond	57, 769
Tool supporter	A. F. Carrier	59, 181
Tool for cutting gas-pipes, &c	W. S. Howarth	52, 715
Tool for holding glass bottles	E. McArdle	54, 572
Tool for opening cans	E. T. Orne	59, 513
Tools, Edge, Holding and grinding, Machine for	J. Richardson	53, 747
Tools, &c., Grinding	N. B. Reynolds	57, 571
Tools, Planing and Turning	C. W. Burdic	59, 958
Tools, Tinman's, forming	W. H. Henderson	54, 341
Tools, Tinners' Edging	W. H. Henderson	54, 342

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Tools for drawing nails	D. T. Robinson	59,657
Tools for splitting bark upon trees	E. Michaels	57,542
Tooth-pick, watch-key, and toggle, Combined	R. Cross	52,687
Tooth-plugger, Dentists'	C. M. Hooker	58,257
Tops, Toy	F. O. and W. W. Tucker	55,591
Torches, Lamplighters'	C. D. Walters and J. Wilson	55,183
Torpedo	J. S. Morris	59,924
Torpedoes, Submarine	J. McDonough	54,183
Tow lines, Detaching	J. H. Carr and E. Andrews	52,385
Toy	J. T. Williams	58,160
Toy boat	G. J. Colby and L. H. Thomas	53,787
Toy building blocks	G. H. Chinnock	60,141
Toy, Mechanical	H. S. Vrooman	58,006
Toy, Spring	J. H. Brown	60,336
Toy walking figure	R. Weir	58,922
Toys and dolls	F. E. Darrow and D. E. Peck	52,142
Toys, Whirling-jack for	F. W. Flagg	55,766
Trace connections	J. E. Peirce	59,258
Trace fastening	J. R. Watkins	60,599
Traces, Button and hoop for, Combined	J. Albert	58,195
Track-clearer, Railway	J. A. Matthews	53,317
Track-clearer, Railway	M. J. Goodwin	58,634
Trammels for elipses	C. Crow	53,524
Transit instruments	W. S. Trowbridge	55,396
Trap, Animal	W. H. Newby	54,393
Trap, Animal	D. N. Phelps	58,286
Trap, Animal	G. E. Clark	60,143
Trap, Fly	N. Pike	52,794
Trap, Insect	W. Ogden	52,067
Trap, Steam	A. M. Force	56,029
Trap, Steam	T. N. Davey	60,622
Trap, Stench	F. H. Williams	56,478
Trap, Stench	F. H. Williams	56,479
Trap for removing water from steam-heating and evaporating apparatus.	R. J. Barr	58,201
Trapping wild fowl	A. Brear	59,953
Traps, Animal	J. H. Elward	51,933
Traps, Animal	C. Melone	53,164
Traps, Animal	G. Wolff	54,241
Traps, Animal	S. F. Jones	54,361
Traps, Animal	A. A. Fradenburg	54,885
Traps, Animal	G. G. Cottrell	55,245
Traps, Animal	J. B. Fairchild	55,478
Traps, Animal	W. H. Campbell	56,175
Traps, Animal	A. Ellis and O. Albertson	56,735
Traps, Animal	D. Cole	57,480
Traps, Animal	S. F. Estell	58,795
Traps, Animal	J. W. Hollingsworth	58,826
Traps, Animal	S. F. Estell	59,762
Traps, Animal	S. F. Dimock	59,980
Traps, Bedbug	E. B. Lake	57,338
Traps, Fly	E. N. Cummings	52,034
Traps, Fly	D. Lake	53,310
Traps, Fly	J. Emery and J. E. Gott	55,007
Traps, Fly	T. Royer	57,384
Traps, Steam	H. N. Foster	52,038
Traps, Steam	J. Naylor	53,031
Traps, Steam	W. Fuzzard	55,081
Traps, Steam	J. Wilson	57,613
Traps, Steam	J. E. Gillepsie	58,808
Treadle motion	E. P. Ryder	53,046
Treadles	A. P. Torrence	59,876
Treadles, Anti-reversing attachment to	A. Warth	54,630
Tread wheel hoisting-power	J. B. Cassel	59,818
Tree protector	D. Knowlton	53,836
Tree protector	T. Tufts	54,232
Tree protector	D. Mendenhall	58,866
Tree protector	B. Merritt, jr	59,623
Tree protector	F. Clymer	59,967
Tree protectors	J. L. Piper	53,672
Tree protectors	B. Beach	53,772
Tree protectors	G. Frost	54,141
Tree protectors	W. and D. McCaine	55,776
Tree protectors	D. P. Mathews	57,937
Trimming for wearing apparel	A. A. Rockwell	54,018
Trimmings, Galloon, for under garments	E. Bredt	58,583
Trimmings, Galloon, for garments	E. Bredt	58,584
Tripe-dressing machine	P. Welch	60,450
Troches, Medicated	C. H. Needles	60,039
Trough, Eave	T. C. Moore	52,438
Trough, Eave	J. P. Abbott	55,595
Trough, Eave	W. Yapp	57,813
Troughs, Eave	J. Jacoby	53,984
Troughs, Eave	O. W. Noble	54,758

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Troughs, Eave, Device for holding while soldering them	E. Wilkinson, jr	57, 237
Troughs, Eaves, Manufacturing	S. Yates	57, 615
Troughs, Feeding	R. Chesnut	57, 447
Troughs, Feeding, for stock	B. Arnold	56, 158
Troughs, Hog	W. H. Robbins	57, 772
Truck, Car	C. F. Allen	54, 085
Truck, Car	T. Lyman	55, 133
Truck, Car	J. Nusbaum	55, 350
Truck, Car	D. J. Happersett	58, 816
Truck, Car	J. S. Howard	59, 021
Truck, Hand	S. R. Dummer	57, 487
Truck, Car, Safety	E. Stiles	57, 404
Truck, Car, Standards for	W. T. Altfather	59, 337
Truck, Railway	H. Strait	54, 975
Trucks, Car	W. Dawson	54, 125
Trucks, Car	L. H. West	55, 403
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Trunk, Travelling	A. McDonald	55, 689
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Valve gear, Cut-off, Steam engine	N. W. Wheeler	52, 475
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Washing machine	A. Hildebrand	53, 978
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Washing machine	A. C. Whittier	54, 458
Washing machine	B. F. Miller	54, 578
Washing machine	S. McNamara	54, 576
Washing machine	M. W. Staples	54, 622
Washing machine	W. H. Sargent	54, 781
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Washing machine	G. S. Foster	56, 031
Washing machine	P. H. Hardy	56, 215
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Washing machine	A. Alexander	56, 688
Washing machine	A. L. Drake	56, 733
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Washing machine	A. Durant and H. Grissvin	56, 911
Washing machine	A. Joyner	56, 950
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Washing machine	A. C. Wade	57, 052
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Washing machine	J. R. Madison	57, 348
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Washing machine	M. J. Lourrentz	57, 740
Washing machine	G. H. Kidney	57, 922
Washing machine	H. Sidle	58, 144
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Washing machine, Surface for	G. M. Denison	59, 979
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Washing machines	J. Lochridge	56, 238
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Water closets	D. Wellington	55, 967
Water closets	J. N. Davis	56, 724
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Water drawers	H. P. Castle	53, 411
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Wheat and other grain, Sowing	C. C. Carter	57, 862
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Whistle for steam and other engines	J. Murray	60, 541
Whistle and toy engine combined	W. W. Mildrum	52, 872
Whistles, Alarm	P. Killin	54, 922
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Wood, Bending	D. Greene	55, 282
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Wood fibres to paper pulp, Reducing	H. Voelter	55, 031
Wood or metal, Apparatus for driving into the ground	W. W. Winter	52, 799
Wood, stone, &c., coating and paints, Improvements in	W. Coggeshall	60, 478
Wood, straw, &c., Paper pulp from	J. W. Dixon	52, 545
Wood, straw, and other materials, Paper pulp from	J. W. Dixon	55, 835
Wood, straw, and other matters, Paper pulp from	J. W. Dixon	55, 836
Wood, straw, and other vegetable fibrous substances, Paper pulp from.	J. H. Dixon	52, 546
Wood, straw, &c., for the manufacture of paper pulp	H. L. Jones and D. S. Farquharsen	55, 418
Wood scraping machines	E. S. French	58, 722
Wooden mat for cars	W. Groat	55, 489
Wool-burring machines	C. L. Goddard	56, 037
Wool-burring and carding machines, Cylinders for	C. L. Goddard	56, 038
Wool, Fleeces of, Folding	J. Porter	56, 443
Wool fleeces, Tying and packing	J. M. Worcester	60, 316
Wool-oiling apparatus for carding engines	P. C. Kirk and W. Pendergast	60, 386
Wool-oiling machinery for carding machinery	C. Jones	56, 758
Wool, Oiling for carding engines	J. H. Aiken	59, 308
Wool, &c., Oiling	T. A. Campbell	51, 891
Wool packer	A. Saeger	52, 752
Wool yolk, Separating and collecting the fatty matter from	J. M. Pendleton	59, 062
Wool, Scouring	G. Michelet	58, 358
Wool, &c., Shearing twisted strands of	E. T. C. Lutton	60, 211
Wool, Treating, for picking, carding, &c	P. S. Haines	55, 490
Wool, Vetetable matter from, Removing	W. Sykes	56, 291
Wool, Washing and drying	J. and W. Yewdall	59, 788
Wool washing machines, Lifting cylinders of	J. Petre, jr., and J. Teal	58, 359
Wool and other fibrous material, Washing	W. Murkland	51, 900
Wool and woollen goods, Cleaning	W. A. Govern	57, 122
Wool and cotton, Picking and cleaning	S. R. Parkhurst	56, 675
Work, Rolled, Holding while being stitched	W. M. McCoy	58, 117
Wrapper, Postal	E. Reed	59, 451
Wrench, Adjustable	A. Sedgwick	58, 306
Wrench, Double-headed	J. J. Love	59, 242
Wrench, Pipe	A. Call	57, 621
Wrench, Screw	H. W. Love	53, 016
Wrench, Screw	J. C. Jackson	55, 109
Wrench, Spring and hammer	L. S. and E. G. Hoyt	55, 107
Wrench and drill	N. Woodbury	52, 106
Wrench for nuts of carriage axles	C. N. Morgan	56, 980
Wrench, poker, tongs, &c., Combined	J. Richards	60, 556
Wrenches	T. C. Page	51, 961
Wrenches	E. P. Furlong	52, 155
Wrenches	J. C. Conner	52, 487
Wrenches	W. Morehouse	52, 930
Wrenches	A. G. Coes	52, 961

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Wrenches	T. Symonds	54,040
Wrenches	W. H. Landbeck	54,178
Wrenches	R. B. Butler	54,290
Wrenches	C. C. Webber	54,471
Wrenches	G. P. Ganster	54,888
Wrenches	G. C. Taft	55,932
Wrenches	A. M. Olds	56,147
Wrenches	R. S. Stenton	56,628
Wrenches	J. F. Dodge	56,731
Wrenches	A. Newton and F. Favro	56,996
Wrenches	I. and C. M. Morris	57,547
Wrenches	W. D. Gold	58,633
Wrenches	H. Dodge	59,370
Wrenches	W. Evans	59,571
Wrenches	W. M. Owen	59,634
Wrenches	J. McLaren	59,852
Wrenches, Pipe	W. W. Wills	55,190
Wrenches, Pipe	D. W. Coggeshall	55,578
Wrenches, Ratchet	W. Pirsson	52,444
Wrenches, Ratchet	W. Pirsson	55,157
Wrenches, Screw	J. L. Crist	55,066
Wrenches, Screw	J. Hegarty	55,100
Wrenches, Screw	G. C. Taft	55,739
Wrenches, Screw	A. Stover	56,460
Wringer, Clothes	J. N. Pease and G. Lewis	56,676
Wringer, Clothes	H. Nash	58,669
Wringer, Clothes	J. S. Lash	59,041
Wringer, Clothes	A. C. Gallahue	59,208
Wringer, Clothes, Roller for	J. B. Forsyth	59,798
Wringer, Mop	F. Rhines	53,489
Wringer, Mop	J. M. Enos	55,413
Wringer and mangle	D. Cummings, jr	53,580
Wringer and washboard	J. Wheeler	60,304
Wringer and washing machine	E. Chesterman	58,215
Wringers, Clothes	W. T. McMillen and E. P. Conrick	56,591
Wringers, Clothes	H. Robbins	56,865
Wringers, Clothes, Roller for	J. Murphy	58,874
Wringers, Roller for	J. B. Forsyth	52,153
Wringers, Roller for	H. Robbins	58,027
Wringers, Rolls for	H. Robbins	54,561
Wringers, washers, &c., Clothes, Roller for	R. B. Hugunin	56,418
Wringing machines, Clamp for	J. Stimpson	58,694
Wringing machines, Roller for	S. F. Emerson	55,077
Wringing machines, Rubber rollers for	J. B. Forsyth	56,398
Wringing and washing machine, Shaft for rubber rollers for	J. Cram	58,780
Wringing and washing machine	E. C. Patterson	53,176
Wringing and washing machine	W. H. Nichols	52,441
Wringing and washing machines	H. Fisher and M. Ball	53,132
Wringing and washing machines	W. J. Shoemaker	56,101
Wristbands	P. T. Gates	53,134
Writing and printing, Machine for	A. Pecler	57,182
Y.		
Yarn delivery apparatus for braiding machines	G. F. Chambers and S. Robinson	55,239
Yarn, Drying	H. Whitehill	60,103
Yarn, Manufacture of	E. T. C. Lutton	60,530
Yarn, Printing	E. J. Stephens and H. E. Green	57,592
Yarns, &c., Dyeing	A. Paraf	52,942
Yarns, Winding	W. Orr, jr	53,746
Yarns or thread previous to weaving, Treating	J. Davies	60,148
Yeast-cake dryer	C. Gleason	57,891
Yeast for baking purposes, Substitute for	J. E. Lauer	60,201
Z.		
Zinc and lead, Sulphurets of mixed, Treating	J. D. Whelpley and J. J. Storer	59,694

REISSUES.

A.		
Abdominal supporters	S. A. Moody	2,165
Air, Carburetting	G. Odiorne	2,253
Alarm, Fire	C. Dion	2,409
Animal and vegetable substances, Preserving	F. Stabler	2,162
Apples, Paring	J. F. Monroe	2,339
Augers	R. Jennings	2,146
Augers, Hollow	A. Wyckoff	2,204
Augers to their handles, Attaching	J. M. Horton	2,229

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B.		
Bag frames	A. J. Sessions	2,345
Balances	R. Shailer	2,341
Blanks for shoe pegs	B. F. Sturtevant	2,286
Blasting compound	L. Ludovici, sr., and L. Ludovici, jr.	2,214
Bleaching fibrous substances	J. J. Eckle and I. S. Schuyler	2,217
Blower	P. H. Roots	2,369
Boilers, Steam, Incrustation in, preventing	N. P. Webster and R. W. Young	2,371
Bonnets, bonnet frames, &c., Pressing	W. E. Doubleday and J. Stewart	2,257
Bonnets, bonnet frames, &c., Pressing	W. E. Doubleday and J. Stewart	2,288
Boots and Shoes, Gaiter, Water-proof	The Goodyear Metallic Rubber Shoe Company.	2,298
Boot and shoe soles, Cutting	J. W. Hatch and H. Churchill	2,321
Bottle stopper	J. Matthews	2,386
Box, Journal, Railway	R. C. Wright	2,338
Breast straps, Metallic shields for	M. W. Pond and H. E. Mussey	2,344
Burners, Lamp	E. Miller	2,412
C.		
Cake baker and egg pan	The Russell and Irwin Manufacturing Company.	2,289
Camera, Solar	D. A. Woodward	2,311
Candles, Moulding	W. Humiston	2,190
Capstan, Steam	J. Schaffer	2,187
Carpet lining	G. W. Chipman	2,416
Carpet lining	G. W. Chipman	2,415
Carriages, Rattling in, Preventing	W. S. Chapman	2,358
Cars, Railway, Street, Starting	T. R. Sinclaire	2,216
Cars for transporting petroleum	J. and A. Densmore	2,261
Cartridge extractor for fire-arms	H. Reynolds	2,234
Cement for slate roofing	C. Wanzer	2,215
Centrifugal machine	G. B. Hartson and E. J. Woolsey	2,302
Chains, Ornamental	James Lancelott	2,147
Churn bodies	J. C. Hill	2,349
Clapboards, Sawing and edging	A. A. Wilder	2,247
Clay, Pulverizing	G. F. Blake and P. Hubbell	2,414
Cloth, India-rubber, Rolling	F. H. Hayward and I. E. Sanborn	2,262
Cloth, India-rubber, Rolling	F. D. Hayward and I. E. Sanborn	2,207
Clothes wringer	Colby Brothers & Co	2,408
Clothes wringer	N. B. White	2,287
Collars, Paper	J. A. Woodbury	2,310
Collars, Paper	J. A. Woodbury	2,309
Collars, Shirt	The Union Paper Collar Company	2,307
Collars, Shirt	The Union Paper Collar Company	2,306
Composition matter for lubricating machinery	The Lester Oil Manufacturing Company.	2,422
Composition matter for printers' inking rollers	L. Francis and C. H. Loutrell	2,195
Compound, Blasting	L. Ludovici, sr., and L. Ludovici, jr	2,214
Compound, Washing	R. W. Chappell	2,364
Condensers, Surface	T. Prosser	2,255
Condensers, Surface	T. Prosser	2,254
Condensers, Tubes of, Packing for	H. Allen	2,237
Cooking, &c., Gas burners for	A. Geiss	2,377
Cooking apparatus, Lamp, Portable	C. A. Harper	2,421
Cooler, Liquid	A. Fischer	2,292
Corn shellers	A. Adams	2,265
Cotton, Picking	W. E. Brall	2,424
Cotton bales, Hoop locks for	E. V. Fassmann	2,417
Cutters, Straw	W. Yale	2,293
Cutters, Straw	W. Yale	2,393
Cutters, Straw	F. B. Hunt	2,368
Cylinder polisher	G. Cowing	2,282
D.		
Dentures, Artificial	J. Guttman	2,411
Dies for making lamp tops, rivets, &c	C. D. Leet, D. Smith, J. M. Hall, and C. K. Farmer.	2,264
Diseases, Treating, Vacuum apparatus for	A. T. Jones	2,276
Distillation	J. F. Collins	2,396
Distilling coal oil and other substances	H. W. C. Tweddle	2,404
Door knobs, Bank and safe	L. Lillie	2,233
Dough, Kneading	G. R. Baker	2,363
Dough kneader	J. C. Loveland	2,265
Drawer for stoves, Ash pan	J. A. Lawson	2,304
Drills	H. H. Packer	2,140
Drilling machine, Steam	J. W. Fowle	2,275
E.		
Eggs, Preserving	R. S. Rhodes and E. Whyte	2,157
Egg pan and cake baker	The Russell and Irwin Manufacturing Company.	2,289

Invention or Discovery.	Name of Patentee.	No.
Elevators, Hay	E. L. Walker	2,429
Elevator and hay spreader	T. W. Craven and W. H. Davis	2,192
Engines, Carding, Cleaning top plates of	H. Woodman	2,202
Engines, Direct action	T. Thatcher	2,256
Engines, Slide valves in direct action	G. W. Hubbard and W. E. Conant	2,359
Engines, Steam, Cut-off valve gear for	A. D. Crombie, L. Colburn, and J. D. M. Green.	2,328
Engines, Steam, Cut-off valve gear for	A. D. Crombie, L. Colburn, and J. M. D. Green.	2,327
Engines, Steam, Valve gear for	A. S. Cameron	2,407
Enve'opes, Gumming and printing	H. C. Berlin and G. H. Jones	2,366
Extracts, Making	A. Steers	2,142
Eyelet for lacing shoes	C. Goodyear, jr	2,176
F.		
Fabric, Felted	M. A. Johnson	2,251
Fabric, Water-proof	R. G. Allerton	2,248
Fibrous and textile substances, Washing and bleaching	J. G. Ford	2,320
Filters and feed water heaters	E. R. Stilwell	2,160
Filters and feed water heaters	E. R. Stilwell	2,159
Fire, Kindling	E. Bellinger	2,366
Fire-arms, Breech loading	H. O. Peabody	2,197
Fire-arms, Breech loading	R. White	2,236
Fire-arms, Breech loading	C. C. Alger	2,231
Fire-arms, Cartridge retractor for	H. Reynolds	2,234
Fire-arms, Magazine	J. Gray, S. S. Bucklin, and W. G. Langdon.	2,249
Fire-arms, Revolving	S. Crispin	2,238
Fire-arms, Revolving	J. J. Greenough	2,223
Fire-arms, Revolving	J. W. Cochran	2,211
Fire-arms, Self-loading	The Spencer Repeating Rifle Co	2,235
Forks, Hay, Horse	S. Rogers	2,260
Forks, Hay, Horse	S. Raymond	2,273
Forks, Hay, Horse	J. S. Brown	2,392
Forks, Hay, Horse	J. S. Brown	2,391
Furnaces, Puddling	P. Keenan and E. O'Connor	2,152
Furnace, Puddling, Fix for	H. McDonald	2,153
G.		
Gas, Carburetting	J. F. Boynton	2,375
Gas, Carburetting	J. F. Boynton	2,376
Gas, Carburetting, for illuminating	J. A. Bassett	2,357
Gas burner for cooking, &c	A. Giess	2,377
Gas holders	M. R. Cook	2,149
Gas pipe joints	H. L. Case	2,342
Gauges, Steam	R. Allen	2,313
Governors, Hydraulic	The Gillispie Governor Company	2,410
Grain, Distributing to different bins	C. S. Hamilton	2,178
Grain binders	S. J. Wallace	2,336
Gun stocks, Boring and drilling	The New York Engraving and Carving Company.	2,413
H.		
Hammers, Power	P. S. Justice	2,398
Hammers, Trip	B. Hotekkiss	2,389
Harrows	F. Granger	2,395
Harvesters	W. K. Miller	2,296
Harvesters	J. S. Marsh	2,354
Harvesters	L. C. Reese	2,259
Harvesters	W. K. Miller	2,266
Harvesters	W. K. Miller	2,270
Harvesters	W. K. Miller	2,294
Harvesters	W. K. Miller	2,295
Harvesters	M. Easterbrook, jr	2,348
Harvesters	W. K. Miller	2,268
Harvesters	W. K. Miller	2,267
Harvesters	W. K. Miller	2,269
Harvesters	R. Hoffheins	2,224
Harvesters	H. H. Smith	2,399
Harvesters	H. H. Smith	2,400
Harvesters	H. H. Smith	2,401
Harvesters	H. H. Smith	2,402
Harvesters	H. H. Smith	2,403
Harvesters	R. T. Campbell	2,382
Harvesters, Grain and grass seed	B. F. Wright	2,279
Harvesters, Reel for, Supporting	R. T. Campbell	2,388
Harvesting machine	J. F. Seiberling	2,230
Hats, Cork	A. C. Crondal	2,150
Hay-hoisting machine	J. S. Lloyd	2,360
Hay spreader and elevator, Combined	T. C. Craven and W. H. Davis	2,192
Heater, Feed-water, and filter	E. R. Stilwell	2,159
Heater, Feed-water, and filter	E. R. Stilwell	2,160

Invention or Discovery.	Name of Patentee.	No.
Hoisting	J. Lanman	2,325
Hoisting machines, Hay,	J. S. Lloyd	2,360
Hook, Self-mousing	The Middletown Tool Company	2,166
Hoop locks for cotton bales	E. V. Fassmann	2,417
Horseshoe	J. W. Hodges and P. DeMurguiendo	2,172
Hose, belting, &c., India-rubber	J. B. Forsyth	2,191
Hose coupling	R. J. Falconer	2,181
Hydrocarbon and rock oil, Distilling	E. F. Prentiss and R. A. Robertson	2,317
Hydrocarbon and rock oil, Distilling	E. F. Prentiss and R. A. Robertson	2,316
I.		
India-rubber, Hollow articles of	C. Goodyear, jr	2,170
India-rubber, Hollow articles of	C. Goodyear, jr	2,169
India-rubber, Rolling	F. D. Hayward and I. E. Sanborn	2,263
India-rubber cloth, Rolling	F. D. Hayward	2,207
India-rubber cloth, Rolling	F. D. Hayward and I. E. Sanborn	2,262
India-rubber hose, belting, &c	J. B. Forsyth	2,191
Iron, Bronze, Imitation of	H. Tucker	2,356
Iron, Bronzing or coloring	H. Tucker	2,355
Iron chips, turnings, &c., Melting and aggregating	E. C. Haserick	2,250
Iron and steel, Plating, tempering, and hardening	The American Metal Company	2,308
J.		
Jack, Pegging	D. Whittemore	2,331
Jar, Preserve	R. A. Bunnel	2,242
Journal box, Railway	R. C. Wright	2,338
K.		
Kettles	H. W. Hayden	2,171
Knitting machines	J. B. Aiken	2,419
Knitting machine	J. H. Hollen	2,225
Knitting machine, Circular, Take-up for	C. Tompkins	2,397
Knobs, Door, bank, and safe	L. Lillie	2,233
L.		
Lamp trimmer and shears	W. B. Barnard	2,209
Lanterns, Machine for making	W. Westlake	2,232
Lanterns	C. E. Cross, J. L. Dane, and W. Westlake.	2,239
Lanterns	W. Westlake, J. E. Cross, and J. L. Dane.	2,337
Lanterns	W. Westlake	2,175
Lanterns, Coal-oil	S. Sargent	2,158
Lard, tallow, &c., Rendering	R. B. Lockwood and C. J. Everett	2,385
Latches, Knob	W. T. Munger and J. A. Leggat	2,361
Limbs, Artificial	A. Mennel	2,218
Locks	R. Vollschwitz, and J. J. Schlaepfer	2,222
Locks	R. B. Burchell	2,420
Locks	P. S. Felter	2,151
Lock and sash stopper	W. Van Gaasbeek	2,201
Locomotives, Street, Running gear of	I. C. Story and G. W. Skaats	2,200
Looms	B. Oldfield	2,378
Looms	B. Oldfield	2,379
Looms, Picker-staff motion for	E. H. Graham	2,367
Looms, Power	C. Duckworth	2,194
Looms, Power	C. Duckworth	2,193
Lubricating machinery, Composition matter for	The Lester Oil Manufacturing Company.	2,422
M.		
Matter, Composition, for printing, inking rollers	L. Francis and C. H. Loutrell	2,195
Melodeons	G. A. Prince, C. E. Bacon, and C. F. S. Thomas.	2,330
Metal, Sheet, Serrating	T. Bracher	2,185
Milk, Condensing	G. Borden	2,226
Mills, Cider	T. J. Kindlerger	2,332
Mills, Saw, Head block for	D. Lane	2,186
N.		
Nails, Cutting	W. Wickersham	2,143
Nail-plate feeding machines	J. C. Gould	2,301
Newspapers, &c., Printing names of subscribers on	H. Moeser	2,161
Nozzles	C. Oyston	2,196
Nuts, Making	G. Dunham	2,324
O.		
Oil, Coal, and other substances, Distilling	H. W. C. Tweddle	2,404
Oil, Rock, and other hydrocarbons, Distilling	E. F. Prentiss and R. A. Robertson	2,316
Oil, Rock, and other hydrocarbons, Distilling	E. F. Prentiss and R. A. Robertson	2,317

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P.		
Packing for tubes of condensers	H. Allen	2,237
Paint for bottoms of ships	J. G. Tarr and A. H. Wonson	2,428
Paints and other materials, Straining	L. B shop and S. Brewer	2,281
Pan for stoves, Ash-sifting	J. Spear	2,305
Paper, Manufacture of	R. L. Delisser	2,365
Paper pulp, Bleaching	The Hydrostatic Paper Company	2,384
Paper pulp, Treating wood, straw, &c., for the manufacture of	The Hydrostatic Poper Company	2,383
Photographs, Enlarging	D. Shive	2,198
Pianos, Stringing	A. Choplain and P. E. Chollet	2,164
Pipe, Gas, Joints for	H. L. Case	2,342
Pipe, Lining, with tin	W. A. Shaw	2,219
Planes, Carpenters' bench	W. H. Taber and T. R. Abbott	2,274
Planters, Corn	J. Case	2,227
Ploughs, Gang	N. F. Burton	2,221
Portfolio	H. T. Sisson	2,199
Potato diggers	L. A. Aspinall	2,280
Power machine, Manual	I. E. Overpeck	2,350
Press, Hay	L. Dederick	2,315
Press, Power	C. W. Johnson	2,144
Press, Tobacco	A. Harthill	2,240
Printers' inking rollers, Composition matter for	L. Francis and C. H. Lontrell	2,195
Printing names of subscribers on newspapers, &c	H. Maeser	2,161
Punching machine	J. Steadman	2,426
Pumps	W. D. Hooker	2,343
R.		
Railways, Warming and ventilating	E. Y. Robbins	2,297
Railroad frogs	E. G. Allen	2,405
Rakes, Horse	C. W. Warner	2,352
Rakes, Horse	S. L. Denney	2,353
Rakes, Horse	R. Pratt	2,156
Rakes, Horse	A. B. Sprout	2,148
Reaping machines	D. Wolf	2,318
Refrigerator	P. A. Vogt	2,346
Roller for wringer	J. F. Pond	2,174
Rubber, White	F. Marquard	2,180
Rubber, White	F. Marquard	2,179
Rubber, Vulcanized, Utilizing waste	C. McBurney	2,206
Rulers	S. L. Simpson	2,220
S.		
Saddles, Riding	L. Meeker	2,394
Safes	R. S. Sanborn	2,390
Salinometers	B. F. Bee	2,347
Sash stopper and locks	W. Van Gaasbeek	2,201
Sausage stuffer	P. Miles	2,329
Saws, Grinding	E. Andrews	2,290
Sawing and edging clapboards	A. A. Wilder	2,247
Sawing machines	L. Wright and C. B. Smith	2,203
Screws, Cutting	J. A. Merriman	2,423
Screws, Shaving and nicking	American Screw Company	2,182
Screws, Wood, Capping	C. T. Grilley	2,284
Sewing machines	J. W. Bartlett	2,210
Sewing machines, Cloth guide for	G. F. Clemons	2,323
Sewing-machine guide	D. Barnum	2,163
Sewing machine for stitching button holes	The Bartram and Fenton Manufacturing Company.	2,245
Shears and lamp trimmers	W. B. Barnard	2,209
Shields, Metallic, for breast straps	M. W. Pond and H. E. Massey	2,344
Shingle machine	C. S. Pond	2,184
Ships, Iron	M. J. Montgomery	2,243
Ships, Iron	M. J. Montgomery	2,244
Shoes, &c., Punching and eyeletting	E. Townsend	2,335
Shoe pegs, Blanks for	B. F. Sturtevant	2,286
Shoulder braces and suspenders, Combined	D. W. Canfield	2,299
Soda water, Drawing	W. Gee	2,177
Soda water, Sirup in, Supplying and measuring	E. Bigelow	2,406
Spinning machines	W. Earl, jr	2,351
Splints, Cutting	J. C. Brown	2,168
Spoons, Manufacture of	C. Parker and R. B. Perkins	2,258
Springs, Car	T. F. Allyn	2,314
Springs, Car	J. G. Pugsley	2,340
Springs, Wagon	C. S. Martin	2,272
Springs, Wagon, Attaching	C. S. Martin	2,271
Springs for ladies' dresses	S. J. Sherman	2,208
Staples, Wire	B. Boardman	2,183
Staves, Cutting	W. Steele	2,427
Steel, Making, direct from iron ore	G. H. Smith	2,333
Steel, Making, direct from iron ore	G. H. Smith	2,334

Invention or Discovery.	Name of Patentee.	No.
Steel and iron, Plating, tempering, and hardening	The American Metal Company	2,308
Stone, Channelling	T. Ross, J. B. Reynolds, R. Berrett, and A. T. Merriman.	2,278
Stone breaker	E. W. Blake	2,145
Stove	J. Spear	2,374
Stove, Ash-pan drawer for	J. A. Lawson	2,304
Stove, Ash-sifting pan for	J. Spear	2,305
Stove, Cooking	E. Bussey	2,319
Stove, Cooking	D. E. Paris	2,291
Stove, Cooking	J. Spear	2,373
Stove, Cooking	J. Spear	2,372
Stove, Heating	J. W. Lane	2,322
Stove, Heating	S. T. Savage	2,425
Straining paints and other materials	L. Bishop and S. Brewer	2,281
Stump extractor	T. Crane	2,228
Substances, Animal and vegetable, Preserving	F. Stabler	2,162
Substances, Fibrous and textile, Washing and bleaching	J. G. Ford	2,320
Supporters, Abdominal	S. A. Moody	2,165
Suspender and shoulder-brace, Combined	D. W. Canfield	2,299
Syrup in soda water, Supplying and measuring	E. Bigelow	2,406
T.		
Tablet, Writing	G. Munger	2,252
Tallow, lard, &c., Rendering	R. B. Lockwood and C. J. Everett	2,385
Tanning	J. Schultz	2,285
Tanning	S. A. Hickel, C. J. and B. F. Armstrong.	2,418
Tape trimming	The Elm City Company	2,188
Telegraph wire, Insulating	A. B. Ely	2,212
Temperature of hot water apparatus, Regulating the	T. T. Tasker	2,246
Textile and fibrous substances, Washing and bleaching	J. G. Ford	2,320
Threshing machine	N. Palmer	2,154
Threshing machine	N. Palmer	2,155
Threshing machine	N. Palmer	2,141
Thread, &c., Dressing and finishing	W. Kiefer	2,303
Tin, Lining pipe with	W. A. Shaw	2,219
Tongs, Pipe	A. Beach	2,283
Tools, Improvements in	The Washoe Tool Company	2,167
V.		
Vacuum apparatus for treating diseases	A. F. Jones	2,276
Valve, Cut-off, Operating	G. H. Reynolds, and M. A. Hinckley	2,381
Valves, Slide, in direct-acting engines, Operating	G. W. Hubbard and W. E. Conant	2,359
Valves, Water-closet	F. H. Bartholm	2,241
Valve gear, Cut-off, for steam engines	A. D. Crombie, L. Colburn, and J. M. D. Greene.	2,328
Valve gear, Cut-off, for steam engines	A. D. Crombie, L. Colburn, and J. M. D. Greene.	2,327
Valve gear for steam engines	A. S. Cameron	2,407
Ventilating and warming railways	E. Y. Robbins	2,297
W.		
Wagon-shaft shackle	H. D. and G. F. Smith and E. W. Twichell.	2,362
Washing compound	R. W. Chappell	2,364
Washing machine	B. Wright	2,370
Watches	M. Burt	2,189
Water apparatus, Hot, Regulating temperature of	T. T. Tasker	2,246
Whiffletree attachment	J. C. Gardner	2,312
Whip-socket fastening	E. Chamberlin	2,387
Wire, Skirt	The Silver Skirt and Wire Manufacturing Company.	2,277
Wire staples	B. Boardman	2,163
Wood, straw, &c, Treating for manufacture of paper pulp	The Hydrostatic Paper Company	2,383
Wood bending machine	J. P. Lelzetter	2,173
Wool, Oiling	G. S. Harwood and G. H. Quincy	2,213
Wringers, rollers, for	J. F. Pond	2,174
Wristbands	P. T. Gates	2,300

DESIGNS.

A.		
Ace of spades	I. Levy	2,306
Alphabet letters	W. H. Carter	2,289
Alphabet letters	W. H. Page	2,267
Alto relievo, Composition in	H. Berger	2,245
Architectural centre flowers	S. Kellett	2,274
Architectural centre flowers	S. Kellett	2,275
Armor, Metallic, of boots and shoes	A. Hamlin	2,375

Invention or Discovery.	Name of Patentee.	No.
B.		
Balance	C. E. Hoffman	2,532
Ball bat, Base	W. H. and P. Reed	2,351
Basket, Work, Stand for	H. Hunermund	2,376
Bat, Ball, Base	W. H. and P. Reed	2,351
Bedstead	P. C. Cambridge, jr	2,278
Bedstead	P. C. Cambridge, jr	2,279
Blacking brush handle	W. A. Green	2,433
Boots and shoes, Metallic armor of	A. Hamlin	2,375
Bottle	W. H. Ware	2,522
Bottle	E. C. Fougera and B. A. Vanderkieft	2,347
Bracelet	J. H. Bellamy	2,524
Bracket	J. H. Bellamy	2,472
Bracket	J. H. Bellamy	2,332
Bracket	A. Bridges	2,312
Bracket	J. M. Bellamy	2,364
Bracket for lamps	F. T. Fracker	2,367
Buggy	J. Reynolds	2,529
Burial case	L. Moses	2,445
Burial case	J. A. Wilson	2,486
Burial casket	W. L. Lockhart and J. C. Seelye	2,510
Bust of A. Lincoln	S. F. Ames	2,255
Bust of A. Lincoln	D. Morgan	2,250
Bust and clock case	W. A. Giles	2,292
C.		
Can, Oil	C. J. Hauck	2,504
Candy figures	L. Schulze	2,461
Candy figure	L. Schulze	2,466
Candy figures	L. Schulze	2,465
Candy figures	L. Schulze	2,462
Candy figures	L. Schulze	2,460
Candy figures	L. Schulze	2,464
Candy figures	L. Schulze	2,463
Card holders	J. Brooks	2,313
Carpet pattern	E. J. Ney	2,453
Carpet pattern	E. J. Ney	2,447
Carpet pattern	E. J. Ney	2,448
Carpet pattern	E. J. Ney	2,446
Carpet pattern	E. J. Ney	2,449
Carpet pattern	E. J. Ney	2,450
Carpet pattern	E. J. Ney	2,451
Carpet pattern	E. J. Ney	2,452
Carpet pattern	E. J. Ney	2,455
Carpet pattern	E. J. Ney	2,454
Carpet pattern	H. G. Thompson	2,420
Carpet pattern	H. G. Thompson	2,399
Carpet pattern	H. G. Thompson	2,397
Carpet pattern	H. G. Thompson	2,401
Carpet pattern	H. G. Thompson	2,398
Carpet pattern	H. G. Thompson	2,415
Carpet pattern	H. G. Thompson	2,400
Carpet pattern	H. G. Thompson	2,396
Carpet pattern	H. G. Thompson	2,403
Carpet pattern	H. G. Thompson	2,405
Carpet pattern	H. G. Thompson	2,402
Carpet pattern	H. G. Thompson	2,407
Carpet pattern	H. G. Thompson	2,406
Carpet pattern	H. G. Thompson	2,410
Carpet pattern	H. G. Thompson	2,404
Carpet pattren	H. G. Thompson	2,409
Carpet pattern	H. G. Thompson	2,412
Carpet pattern	H. G. Thompson	2,394
Carpet pattern	H. G. Thompson	2,411
Carpet pattern	H. G. Thompson	2,392
Carpet pattern	H. G. Thompson	2,391
Carpet pattern	H. G. Thompson	2,390
Carpet pattern	H. G. Thompson	2,389
Carpet pattern	H. G. Thompson	2,426
Carpet pattern	H. G. Thompson	2,408
Carpet pattern	H. G. Thompson	2,425
Carpet pattern	H. G. Thompson	2,395
Carpet pattern	H. G. Thompson	2,424
Carpet pattern	H. G. Thompson	2,423
Carpet pattern	H. G. Thompson	2,422
Carpet pattern	H. G. Thompson	2,417
Carpet pattern	H. G. Thompson	2,418
Carpet pattern	H. G. Thompson	2,416
Carpet pattern	H. G. Thompson	2,414
Carpet pattern	H. G. Thompson	2,393
Carpet pattern	H. G. Thompson	2,413
Carpet pattern	H. G. Thompson	2,421

Invention or Discovery.	Name of Patentee.	No.
Carpet pattern	H. G. Thompson	2,419
Carriages, Advertising, Hat	J. Jackson, jr	2,509
Casket, Burial	W. W. Roberts	2,363
Casket, Burial	W. L. Lockhart and J. C. Leelyc	2,510
Cenograph, Military	J. S. Armstrong	2,293
Centre piece	S. Kellett	2,439
Centre piece	S. Kellett	2,439
Centre piece	H. Berger	2,430
Chandelier	F. T. Fracker	2,366
Chandelier	F. T. Fracker	2,365
Chandelier	J. F. Travis	2,330
Clock	F. T. Fracker	2,368
Clock case	F. T. Fracker	2,360
Clock case	N. Müller	2,502
Clock case	W. A. Giles	2,291
Clock case	F. T. Fracker	2,259
Clock case	W. A. Giles	2,525
Clock case	W. A. Giles	2,526
Clock case	N. Miller	2,377
Clock case, Door of a	N. Pomeroy	2,362
Clock case front	N. Miller	2,354
Clock case front	L. F. and W. W. Carter	2,431
Clock case and bust	W. A. Giles	2,292
Clock case and statuette	W. A. Giles	2,290
Coffin	T. Devins	2,265
Coffin handle	C. L. Nieberg	2,308
Coffin handle	P. Bradford	2,284
Coffin handle	S. D. Arnold	2,380
Coffin handle	C. L. Nieberg	2,481
Coffin handle	A. B. Bailey	2,387
Coffin trimmings	S. D. Arnold	2,381
Coffin trimmings	S. D. Arnold	2,386
Coffin trimmings	S. D. Arnold	2,385
Coffin trimmings	S. D. Arnold	2,384
Coffin trimmings	S. D. Arnold	2,382
Collars, Paper	C. D. Elliot	2,346
Collars, Paper	B. G. Briggs	2,343
Collars, Paper	B. G. Briggs	2,358
Collars, Paper	J. A. Charnley	2,498
Collars, Paper	W. S. Bell	2,256
Collars, Paper	B. G. Briggs	2,344
Collars, Paper	B. G. Briggs	2,342
Collars, Paper, Ladies' tucked	J. M. Flagg	2,334
Collars and cuffs	E. J. Frost	2,348
Collars and cuffs, Paper	W. S. Bell, jr	2,288
Comb, Child's long	L. Picot	2,457
Comb, Child's long	L. Picot	2,493
Comb, Child's long	L. Picot	2,483
Comb, Child's long	L. Picot	2,482
Combs, Children's, Ornamenting	L. Picot	2,496
Composition in alto relievo	H. Berger	2,245
Cuffs, Paper	B. G. Briggs	2,356
Cuffs, Paper	B. G. Briggs	2,357
Cuffs and collars	E. J. Frost	2,348
Cuffs and collars, Paper	W. S. Bell, jr	2,288
D.		
Door of a clock case	N. Pomeroy	2,362
Drapery trimmings	C. Lambert	2,490
E.		
Envelope	S. Raynor	2,340
F.		
Fabric for trimmings	T. Merry	2,259
Fabric for trimmings	T. Merry	2,261
Fabric for trimmings	T. Merry	2,260
Fabric for trimmings	T. Merry	2,262
Felted goods	M. A. Johnson	2,371
Fence	J. C. Geashart	2,388
Figures, Group of	J. Rogers	2,521
Figures, Group of	J Rogers	2,352
Figures, Group of	J. Rogers	2,251
Flowers, Architectural	S. Kellett	2,276
Flowers, Architectural centre	S. Kellett	2,274
Flowers, Architectural centre	S. Kellett	2,275
Fork or spoon handle	W. B. Durgin	2,470
Frame of a sewing and embroidering machine	J. B. Bartlett	2,295
Furnace, Portable	J. Martin, J. Peesley, and J. Currie	2,282
G.		
Goblet	C. Ballinger	2,323

Invention or Discovery.	Name of Patentee.	No.
H.		
Handles, Brush, Blacking	W. A. Green	2,433
Handles, Fork or spoon	W. B. Durgin	2,470
Handles, Fork or spoon	G. Sharpe	2,512
Handles, Spoon or fork	G. J. Mire	2,328
Head, Ornament for	S. E. Cook	2,294
Hinge plate	S. M. Richardson	2,283
Hood, Ladies'	J. Taylor	2,311
Hook, Coat or hat	J. B. Sargent	2,310
Hook, Snap	J. Protz	2,458
K.		
Knife handle	S. Oppenheimer	2,317
Knife handle	H. H. Hayden	2,530
L.		
Label	A. Miller	2,471
Lamp, Bracket for	F. T. Fracker	2,367
Lamp, Coach	J. H. Downs	2,508
Lamp, Coach	E. Blakeslee	2,506
Lamp, Coach	A. P. De Vournsey	2,500
Lamp, Coach	M. De Vournsey	2,500
Lamp, Hall, Pulley	F. T. Fracker	2,432
Lamp flue	T. Moore and J. S. Haldeman	2,474
Lathe, Grinding, Dentists'	H. Coy	2,476
Letters, Alphabet	W. H. Page	2,267
Letters, Alphabet	W. H. Carter	2,289
Light, Pendent	F. T. Fracker	2,369
Lock, Door	J. H. Barnes	2,263
M.		
Medallion of General Grant	J. Powell	2,258
Monument, Cemetery	R. Miller	2,511
Monument, Military	J. S. Armstrong	2,497
O.		
Oil-cloth, Floor	R. Haskin	2,515
Oil-cloth, Floor	C. T. Meyer	2,285
Oil-cloth pattern, Floor	C. T. Meyer	2,441
Oil-cloth pattern, Floor	C. T. Meyer	2,495
Oil-cloth pattern, Floor	C. T. Meyer	2,442
Oil-cloth pattern, Floor	C. T. Meyer	2,444
Oil-cloth pattern, Floor	C. T. Meyer	2,443
Oil-cloth pattern	J. S. Webster	2,469
Ornament for the head	S. E. Cook	2,294
P.		
Paper hangings, &c	C. Husband	2,494
Pen	E. A. Marsh	2,307
Pen and pen boxes, Trade mark for	J. B. Waring	2,243
Picture frame	J. H. Bellamy	2,428
Picture frame	J. H. Bellamy	2,429
Picture frame	J. H. Bellamy	2,523
Picture frame	J. H. Bellamy	2,296
Picture for animal studies, Ornamental	C. A. Foster	2,514
Pipe, Tobacco	L. Saarbach	2,286
Pipe, Tobacco	J. Havey	2,505
Pipe, Tobacco	L. Saarbach	2,304
Pipe, Tobacco	G. C. Britner	2,507
Pipe, Tobacco	L. Saarbach	2,309
Pitcher	E. Kaufman	2,327
Pump	B. S. Nichols	2,293
R.		
Railing	J. McArthur	2,303
Range, Cook's	J. Martin, J. Beesley, and J. Currie	2,302
Range, Cook, Plates of	R. Moss	2,480
Range, Cook's portable	S. W. Gibbs	2,246
Reel	C. Lambert	2,478
S.		
Safe, Cigar and tobacco	J. H. Knight and J. P. Farrand	2,477
Sewing machine	J. Bond, jr	2,473
Sewing machine, Frame of a	J. Bond, jr	2,474
Sewing and embroidering machine, Frame of a	J. B. Bartlett	2,295
Shafting hanger	C. C. Klein	2,528

Invention or Discovery.	Name of Patentee.	No.
Shawl border	M. M. Peyser	2,491
Shawl border	M. M. Peyser	2,492
Shoe, Balmoral, Quarters of a	T. R. Evans	2,239
Sifter, Flour	H. L. Meservey	2,257
Spoon handle	G. I. Mix	2,249
Spoon handle	H. Hebbard	2,531
Spoon handle	A. Conradt	2,475
Spoon handle	J. L. D. Sullivan	2,331
Spoon or fork handle	G. I. Mix	2,328
Spoon or fork handle	G. Sharpe	2,512
Stamps, Cancelling	B. B. Hill	2,434
Stamp, Hand	H. H. Grosskoff	2,301
Stand, Work basket	H. Hunnermund	2,376
Statuette	S. Conkey	2,353
Statuette and clock case	W. A. Giles	2,290
Stool, Piano	C. Zeuner	2,264
Stove	J. Martino, J. Beesley, and J. Currie	2,361
Stove	W. Resor	2,516
Stove	W. Resor	2,517
Stove	W. Resor	2,518
Stove, Coal	C. Harris and P. W. Zoiner	2,339
Stove, Cooks'	S. W. Gibbs	2,247
Stove, Cooks'	C. Harris and P. W. Zoiner	2,337
Stove, Cooks'	G. Smith and H. Brown	2,253
Stove, Cooks'	W. Resor	2,520
Stove, Cooks'	W. Resor	2,519
Stove, Cooks'	J. R. Hyde	2,437
Stove, Cooks'	J. Martino, J. Beesley, and J. Currie	2,350
Stove, Cooks'	G. F. Spicer	2,329
Stove, Cooks'	G Smith and H. Brown	2,252
Stove, Cooks'	J. Steffe	2,485
Stove, Cook's, Plates of a	G. Smith and H. Brown	2,287
Stove, Cook's, Plates of a	S. H. Ransom	2,321
Stove, Cook's, Plates of a	S. H. Ransom	2,332
Stove, Cook's, Plates of a	S. H. Ransom	2,320
Stove, Cook's, Plates of a	S. W. Gibbs	2,314
Stove, Cook's, Plates of a	S. H. Ransom	2,319
Stove, Cook's, Plates of a	S. W. Gibbs	2,315
Stove, Cook's, Plates of a	S. H. Ransom	2,318
Stove, Cook's, Plates of a	J. Van Wormer	2,468
Stove, Parlor	C. Harris and P. W. Zoiner	2,338
Stove ornament	S. S. Utter	2,467
Stove panel	C. H. Drew	2,345
Stove plates	G. Himrod and C. G. Moulton	2,436
Stove plates	G. Himrod and C. G. Moulton	2,435
Stove plates	L. Rathbone	2,242
Stove plates	G. Smith and H. Brown	2,379
Stove plates	L. Rathbone	2,241
Stove plates	G. Smith and H. Brown	2,271
Stove plates	G. Smith and H. Brown	2,272
Stove plates	G. Smith and H. Brown	2,270
Stove plates	J. G. Abbott	2,244
Stove plates	S. Smith	2,240
Stove plates	S. W. Gibbs	2,427

T.

Table cover	J. R. Wasley	2,503
Tobacco and cigar safe	J. H. Knight and J. P. Farrand	2,477
Tops, Ornamentation of	E. F. Kelley	2,349
Trade mark	J. W. Carroll	2,488
Trade mark	J. W. Carroll	2,487
Trade mark	S. E. Barney	2,332
Trade mark	D. B. Kimball	2,527
Trade mark	F. O. Day and W. S. Stewart	2,298
Trade mark	W. Freudenau	2,489
Trade mark	G. W. Westbrook	2,513
Trade mark	E. Locher	2,372
Trade mark	R. J. Roberts	2,373
Trade mark	D Shirrill	2,374
Trade mark	E. F. Peugeot	2,456
Trade mark	R. S. Lyon	2,277
Trade mark	J. Schedler	2,268
Trade mark	J. Schedler	2,269
Trade mark	A. W. Fagin	2,280
Trade mark	W. Freudenau	2,501
Trade mark	J. Hoge and R. D. Schultz	2,248
Trade mark	S. S. Putnam	2,378
Trade mark	F. O. Day and W. S. Stewart	2,299
Trade mark	H. Fletcher	2,336
Trade mark	P. A. Berthold and M. Thompson	2,305
Trade mark	F. O. Day and W. S. Stewart	2,300

Invention or Discovery.	Name of Patentee.	No.
Trade mark	S. F. Stone	2,325
Trade mark	H. Fletcher	2,335
Trade mark	L. and A. J. Sohl and D. Gibson	2,341
Trade mark	C. A. Perry	2,355
Trade mark for lead pencils	L. H. Flershcim	2,326
Trade mark for pens and pen boxes	J. B. Waring	2,243
Trimmings, Drapery	C. Lambert	2,490
Tumbler, Drinking	J. Matthews, jr	2,440
Type, Printing	A. Little	2,316
V.		
Vessels, Sheet metal, Base of	J. H. Stone	2,254
W.		
Watch, Top plate of a	F. A. Giles	2,266
Watch, Top plate of a	F. A. Giles	2,881
Watch plate	E Howard	2,370
Weather-boarding	J. H. Clark and J. Rhinesmith	2,297
Wheel	A. Rank	2,484
Wheel of a harvesting machine	A. Rank	2,324

EXTENSIONS.

B.		
Beehive	L. L. Langstroth	9,300
Beehives, Moth trap for	E. W. Phelps	8,859
Bell, Alarm, Electro-magnetic	M. G. Farmer	8,920
Bomb lance for killing whales	C. C. Brand	9,047
Boot soles, Cutting pegs out of	D. D. Allen	9,340
Brakes, Car, Railroad	G. O. Way and A. G. Bachelder	9,109
Bridges, Construction of	W. Bollman	8,624
C.		
Cracker machine	J. McCollum	8,828
F.		
Fan, Buckwheat	A. Platt	8,659
Fence, Iron, Ornamental connections of	H. Jenkins	8,654
Floor cloth, Printing	S. Savage	8,778
Fuel, Granular, from brushwood and twigs	R. Daniels	9,015
G.		
Gate, Canal lock	C. Neer	8,789
Grain, Drying	H. G. Bulkley	8,769
Grain separator	P. Geiser	9,341
Grain separator	John R. Moffitt	9,432
Grain separator and smut mill	D. Shaw	8,861
Gutta-percha, Manufacturing	J. Rider	8,993
H.		
Harvester. (Reissue, 1,972 A.)	E. B. Forbush	9,134
Harvester. (Reissue, 1,973 B.)	E. B. Forbush	9,134
Harvester. (Reissue, 1,974 C.)	E. B. Forbush	9,134
Harvester. (Reissue, 1,975 D.)	E. B. Forbush	9,134
Harvester	B. Densmore	8,720
Harvester, Grass	L. R. Ketchum	8,724
Harvester, Grass. (Reissue No. 9, of 1861.)	Jesse S. and D. Lake	9,137
Harvester, Grass. (Reissue No. 10, of 1861.)	Jesse S. and D. Lake	9,137
Harvester, Grass. (Reissue No. 11, of 1861.)	Jesse S. and D. Lake	9,137
Harvester, Grass. (Reissue No. 12, of 1861.)	Jesse S. and D. Lake	9,137
I.		
Iron, Smoothing	N. Taliaferro and W. D. Cumming	8,848
K.		
Knitting machine, Rotary	Daniel Tainter	9,435
L.		
Label card	J. Sharp	9,039
Lath machine	H. C. Smith	9,286
Lock, Door	W. Moore	9,265
Loom, Hand	S. C. Mendenhall and O. and E. King	9,388

Invention or Discovery.	Name of Patentee.	No.
Looms, Harness in, Counterbalancing	J. Greenhalgh	9,377
Looms, Jacquard, Pattern card for	S. T. Thomas and E. A. Adams	8,810
Loom, Power	R. Reynolds	8,984
Looms, Shuttles in, Throwing	S. C. Mendenhall	9,387
Looms, Temple for	Sarah and W. W. Dutcher	9,502
M.		
Metallic strips or skelps, Bending the edges of	R. Knight	9,274
Mill, Grinding	O. Nichols	9,330
Mill, Smut, and grain separator	D. Shaw	8,861
Mortising machine	Joseph Guild	9,431
Moth trap for beehives	E. W. Phelps	8,859
P.		
Pegs, Cutting, out of boot soles	D. D. Allen	9,340
Pill making machine	E. A. Pond	9,455
Planing machines, Feed apparatus of	J. Whitney	8,881
Ploughs, Constructing	A. Gardner and W. L. Hunter	9,362
S.		
Safe, Iron	W. Alford and J. D. Spear	8,952
Saw blades, &c., Grinding and polishing	W. Southwell	8,929
Screws, Capping of	C. T. Grilley	8,888
Sewing machine	A. B. Wilson	9,041
Sewing machine	W. O. Grover and W. E. Baker	9,053
Skelps or metallic strips, Bevelling the edges of	R. Knight	9,274
Smut machine	J. M. Earls	8,904
Spinner, Ring	M. A. Dodge	8,683
Spinning, Self-acting mule for	W. Rouse	9,378
Stone, Machine for drilling	J. J. Couch	9,415
Stoves, Air heating	J. M. Thatcher	8,832
T.		
Tube, Speaking	T. J. Woolcocks and W. Ostrander	8,932
V.		
Vault covers, Illuminating	T. Hyatt	4,266
W.		
Wagon, Dumping	T. Castor	9,164
Whales, Killing, Bomb lance for	C. C. Brand	9,047
Whiffletree hook	E. A. Palmer and A. J. Simmons	9,252
Z.		
Zinc, White, Manufacture of	M. M. Jones	8,756

REPORT

OF THE

COMMISSIONER OF PATENTS

FOR

THE YEAR 1866.

LETTER

FROM THE

COMMISSIONER OF PATENTS,

TRANSMITTING

HIS ANNUAL REPORT FOR THE YEAR 1866.

UNITED STATES PATENT OFFICE,
Washington, D. C., January 30, 1867.

SIR: I have the honor to transmit herewith the annual report of this office for the year 1866, to be laid before Congress.

I am, very respectfully, your obedient servant,

T. C. THEAKER,
Commissioner of Patents.

Hon. SCHUYLER COLFAX,
Speaker of the House of Representatives.

UNITED STATES PATENT OFFICE,
January 30, 1867.

SIR: I have the honor to submit the following report of the business of this office during the year 1866.

The receipts and expenditures of the office for the year, and the condition of the patent fund at its close, are shown by the following statements:

No. 1.

Number of applications for patents during the year	15,269
Number of patents issued, including reissues and designs	9,450
Number of caveats filed	2,723
Number of applications for extensions of patents	67
Number of patents extended	58
Number of patents expired	1,042
Of the patents granted, there were to—	
Citizens of the United States	9,210
Subjects of Great Britain	127
Subjects of French empire	48
Subjects of other foreign governments	65

No. 2.

Statement of money received during the year, namely:

On applications for patents, reissues, &c	$460,798 20
For copies and recording assignments, &c	34,867 18
Total amount	495,665 38

No. 3.

Statement of expenditures.

For salaries, including $29,107 48 additional pay, as per act of June 18, 1866	$149,623 17
For contingent expenses	95,006 60
For temporary clerks	115,381 76
For withdrawals	540 00
For refunding money paid by mistake	924 00
For fees to judges in appeal cases	248 75
Total expended	361,724 28

No. 4.

Statement of the condition of the patent fund.

Amount to the credit of said fund, January 1, 1866	$130,184 78
Amount of receipts during the year	495,665 38
Total	625,850 16
From which deduct the amount of expenditures	361,724 28
Leaving to the credit of the patent fund, January 1, 1867	264,125 88
Surplus of receipts over expenditures during the year	133,941 10

Table showing the business of the office for thirty years ending December 31, 1866.

Years.	Applications filed.	Caveats filed.	Patents issued.	Cash received.	Cash expended.
1837	.....	.....	435	$29,289 08	$33,506 98
1838	.....	.....	420	42,123 54	37,402 10
1839	.....	.....	425	37,260 00	34,543 51
1840	765	228	473	38,056 51	39,020 67
1841	847	312	495	40,413 01	52,666 87
1842	761	291	517	36,505 68	31,241 48
1843	819	315	531	35,315 81	30,766 96
1844	1,045	380	502	42,509 26	36,344 73
1845	1,246	452	502	51,076 14	39,395 65
1846	1,272	448	619	50,264 16	46,158 71

Table showing the business of the office—Continued.

Years.	Applications filed.	Caveats filed.	Patents issued.	Cash received.	Cash expended.
1847	1,531	553	572	$63,111 19	$41,878 35
1848	1,628	607	660	67,576 69	58,905 84
1849	1,955	595	1,070	80,752 78	77,716 44
1850	2,193	602	995	86,927 05	80,100 95
1851	2,258	760	869	95,738 61	86,916 93
1852	2,639	996	1,020	112,056 34	95,916 91
1853	2,673	901	958	121,527 45	132,869 83
1854	3,324	868	1,902	163,789 84	167,146 32
1855	4,435	906	2,024	216,459 35	179,540 33
1856	4,960	1,024	1,502	192,588 02	199,931 02
1857	4,771	1,010	2,910	196,132 01	211,582 09
1858	5,364	943	3,710	203,716 16	193,193 74
1859	6,225	1,097	4,538	245,942 15	210,278 41
1860	7,653	1,084	4,819	256,352 59	252,820 80
1861	4,643	700	3,340	137,354 44	221,491 91
1862	5,038	824	3,521	215,754 99	182,810 39
1863	6,014	787	4,170	195,593 29	189,414 14
1864	6,972	1,063	5,020	240,919 98	229,868 00
1865	10,664	1,063	6,616	348,791 84	274,199 34
1866	15,269	2,723	9,450	495,665 38	361,724 28

The foregoing shows that the number of applications for patents received in 1866 exceeded that of 1865 by nearly fifty per cent., and that of 1864 by more than one hundred per cent., and the number of caveats filed exceeded that of 1865 by nearly two hundred per cent. The number of patents issued exceeded that of 1865 by nearly fifty per cent., while that of 1865 exceeded any previous year by more than thirty per cent.

The receipts into the patent fund exceeded that of 1865 by more than forty-two per cent., while the expenditures were increased less than thirty-three per cent., and 1865 exceeded that of any previous year in receipts by more than thirty-six per cent.

If the business of the office continues to increase as now, and as it has for several months last past, it is not unreasonable to suppose that the number of applications during the present year will amount to nearly, if not quite, twenty thousand. This very great increase of the business of the office renders it absolutely necessary that the clerical and examining force be correspondingly augmented, and this cannot be done without providing more room than we now have, as every room we have is filled far beyond its utmost reasonable capacity. In some of the rooms the clerks are so crowded that they cannot comfortably do their work, and of necessity they very often and very greatly interrupt each other, which seriously retards the business of the office, and which cannot be remedied in any other way than by furnishing us with additional rooms.

The examiners have suffered great inconvenience, and the public interests great detriment, from the necessity that has existed for several years past of conducting the examination of several classes of subjects in the same room—for instance, steam-engines and all cognate subjects under one principal examiner with his several assistants, and hydraulics, pneumatics, and wearing apparel, under another with his several assistants, are all crowded into one room. The inconvenience named arises to a great extent from the limitation as to space, but in a far greater degree from the diverse character of the inventions under examination; the exposure to the many applicants of inventions that should be kept private; the discussions in the hearing of both the principal examiners, their several assistants, and of the various attorneys and applicants, of matters which

should be known only to the parties in interest, often, doubtless, to the prejudice of justice, and always to the embarrassment of the business of those not engaged in the particular case in controversy.

The draughtsmen, who prepare the small drawings from which the engravings for the illustrations to accompany the Patent Office reports are made, are greatly in need of more room. Six are now employed, and they are at present located in one of the model saloons, between the model cases, with merely a temporary curtain suspended across from one case to another, to shut them out from the view of the many visitors who are daily traversing the saloons. They are thus located because there is no other place to put them, and this difficulty must very soon be increased, as it is absolutely necessary to double the number of the draughtsmen in order to keep up with the increasing business of the office.

In the room in which the drawings of inventions are kept, there are about 100,000 sheets of said drawings in a space originally designed for the reception of about 25,000, and the consequent damage resulting to these drawings from the crowded condition in which they are kept in this room, is a matter of very serious consideration.

Should the business of this office continue to increase—and it doubtless will do so—it will soon be entirely impossible to take proper care of the drawings unless more room be furnished for that purpose.

The library of this office has vastly grown in importance within the last few years. It is not only needed and used as an absolute necessity by the examiners in the performance of their duties, but it is now so much consulted by inventors and those engaged in their interest, by whose money the office has been built up, and who exclusively sustain it, that the want of room and books is now signally felt. It is not an uncommon thing for persons to come from distant parts of the United States to consult books which can only be found here. A careful examination of the catalogues of other libraries shows that the Patent Office collection is now one of the best technical libraries in the world, if not the very best. The high price of gold and the limited means of the office during the war prevented the purchase of many volumes which are much needed. Gold has very much depreciated, and the means of the office are now ample, and there are needed many volumes of necessary works to complete series heretofore kept up, which must soon be purchased or be hereafter bought at a much greater cost, if they can be procured on any terms, and there is really no room for any additional volumes if such were now on hand. The works consulted in this library are, very many of them, of large size, and require corresponding space for their examination. It often happens that every table in the room now occupied by the library is more than covered with volumes for examination, and this, too, in places which should not be open to the public at large.

The want of room for the mere deposit of books is so great that many of them are of necessity stowed in the halls, in other rooms, and even piled on the floors. This is an every-day inconvenience; add to this the want of room for consulting the volumes as above mentioned, and there will be found a very valuable public institution which is deprived of much of its real means of usefulness for want of proper space for the use of its advantages.

Deeming it to be my duty to call the attention of Congress to the matter of the indispensable necessity that exists for much more room in order to properly carry on the now great and rapidly increasing business of this office, I have, as briefly as I could, made the foregoing representations, in the confident hope that your honorable body will at no very distant day take measures to afford the relief which is so much needed.

All of which is most respectfully submitted.

T. C. THEAKER,
Commissioner of Patents.

ALPHABETICAL LIST OF PERSONS WHOSE PATENTS FOR INVENTIONS AND DISCOVERIES HAVE EXPIRED DURING THE YEAR 1866.

No.	Patentee.	Invention or discovery.	Date.	Class.
9,241	Adams, Federal C	Irons, smoothing	Sept. 7, 1852	XVIII.
9,145	Adams, Henry W	Zinc, preparing from the ores	July 27, 1852	IV.
9,175	Adams, Henry W	Gas, illuminating, process for making	Aug. 10, 1852	IV.
8,714	Adams, John Jay	Brushes, shoe	Feb. 10, 1852	XVII.
9,127	Adkins, Orville G	Engines, fire	July 20, 1852	XI.
9,064	Ager, Wilson	Hulling buckwheat	June 29, 1852	I.
9,063	Ager, Wilson	Millstone, dress	June 29, 1852	XIII.
9,351	Akrill, John	Crucibles and other articles of earthenware, mode of forming	Oct. 26, 1852	XV.
8,993	Akrill, John	Retorts for chemical furnaces, construction of	June 8, 1852	IV.
9,244	Albee, Simeon W	Chickens, apparatus for feeding	Sept. 7, 1852	I.
	Albro, James. (*See* Patterson, assignor to Albro.)			
9,111	Albro, Samuel	Tonguing boards, machines for	July 13, 1852	XIV.
8,767	Albro, Stephen	Life-preservers	Mar. 2, 1852	VII.
9,257	Aldrich, Samuel	Clothes pins	Sept. 14, 1852	XVII.
9,226	Alvord, Clark	Clay, mixing and mashing vegetables, mill for	Aug. 31, 1852	XV.
9,089	Ames, Nathan, assignor to Walter Bryent	Square, centre, for finding the centre of a circle	July 6, 1852	VIII.
8,963	Andrews, Albert F	Fences, machinery for making	May 25, 1852	IX.
8,868	Andrews, Solomon	Punches, drop	Apr. 13, 1852	II.
9,267	Andrews, William H. and R. T	Lamps, alarm timepiece for lighting	Sept. 21, 1852	V.
8,715	Arrowsmith, Samuel T. D	Watch-chain swivels	Feb. 10, 1852	VIII.
8,916	Ash, William F	Drills, rock	May 4, 1852	IX.
9,268	Ashborn, James	Guitars, &c., tuning pegs for	Sept. 21, 1852	XVIII.
8,816	Asherfelder, Josiah	Omnibus step	Mar. 23, 1852	X.
9,479	Atkins, Jearum	Harvesters, grain rakes to	Dec. 21, 1852	I.
8,646	Aumock, Christopher	Knives and forks, machine for scouring	Jan. 13, 1852	XVII.
9,338	Avery, Otis	Sewing machines	Oct. 19, 1852	III.
9,211	Ayers, J. N	Bill registers	Aug. 24, 1852	VIII.
8,953	Bachelder, Asahel G	Saw-sets	May 18, 1852	XIV.
9,269	Bacon, Charles E	Carving machines	Sept. 21, 1852	XIV.
9,161	Bailey, Charles P	Car seats, railroad	Aug. 3, 1852	X.
8,834	Bailey, Thomas W	Sausage stuffers	Mar. 30, 1852	XVII.
8,750	Bailey, Timothy	Knitting machines	Feb. 24, 1852	III.
8,869	Baker, William	Hinges	Apr. 30, 1852	II.
8,817	Bakewell, William H	Awnings, shop	Mar. 23, 1852	XXII.
8,900	Baldwin, Mathias W	Valves for steam engines	Apr. 27, 1852	VI.
9,312	Baldwin, M. W., and David Clark	Boilers, apparatus for heating feed-water of steam	Oct. 12, 1852	VI.
8,819	Ball, E., assignor to J. N. McAbee	Ploughs	Mar. 23, 1852	I.
8,850	Ball, Thaddeus J., and John Past	Cultivators	Apr. 6, 1852	I.
8,820	Ball, William	Cannon, friction primers for	Mar. 23, 1852	XIX.
8,818	Ball, William	Ores, machines for stamping	Mar. 23, 1852	XIII.
8,835	Ball, William	Ores, mill for grinding	Mar. 30, 1852	XIII.
9,045	Barclay, Alexander	Gold, washing, amalgamating, &c., machine for	June 22, 1852	II.
8,733	Barker, Abel	Pumps	Feb. 17, 1852	XI.
8,933	Barker, Samuel	Blind and shutter fastener	May 11, 1852	II.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
9,065	Barker, Samuel	Sail hank	June 29, 1852	VII.
9,398	Barnes, Charles L	Bits, expanding	Nov. 16, 1852	XIV.
9,313	Barnett, Thomas	Mill-stones	Oct. 12, 1852	XIII.
8,768	Barnhill, William	Boiler, steam arrangement of	Mar. 2, 1852	VI.
8,622	Barnum, N. S., and L. Whitney	Ventilating railroad cars	Jan. 6, 1852	V.
9,177	Bar, William P	Type casting	Aug. 10, 1852	XVIII.
8,352	Barrett, Luman	Boat crimps	Sept. 9, 1852	XVI.
9,128	Bass, William L	Car seats	July 20, 1852	X.
9,046	Bassell, Joel R	Pumps, valves for	June 22, 1852	XI.
9,498	Bayles, Daniel S	Vessels, yards of, parrel for	Dec. 28, 1852	VII.
8,796	Beales, Fordyce	Plane irons, double	Mar. 16, 1852	XIV.
8,917	Beecher, Lewis W	Gauges, leather	May 4, 1852	XVI.
9,011	Belknap, Elbridge G	Fastenings for garments	June 15, 1852	XXI.
9,397	Belknap, Moody, assignor to Moody Belknap and Lyman Kinsley.	Spike machinery, reciprocating die	Nov. 9, 1852	II.
8,918	Bentley, Alonzo	Potato masher	May 4, 1852	XVII.
9,293	Bergey, Jacob	Grain separators	Oct. 5, 1852	I.
9,499	Bartolet, Maybery A., L. Kirk, and Andrew M. De Hart	Gold, &c., by amalgamation, method of obtaining	Dec. 28, 1852	II.
9,227	Best, Christopher G	Furnace, reverberatory	Aug. 31, 1852	V.
8,851	Betteley, Albert	Lock	Apr. 6, 1852	II.
8,934	Betts, William C	Bedsteads, portable cot	May 11, 1852	XVII.
9,363	Bigelow, E. B	Pile fabrics, pile wires, pincers for weaving	Nov. 2, 1852	III.
8,836	Bishop, Charles	Excavating machines	Mar. 30, 1852	IX.
9,314	Bishop, Charles	Ploughs, gang	Oct. 12, 1852	I.
8,821	Bishop, George G	Felting cloth, machinery for	Mar. 23, 1852	III.
8,901	Blair, John Cust	File-cutting machine	Apr. 27, 1852	II.
8,882	Blake, Numan	Augers, submarine	Apr. 20, 1852	IX.
8,650	Blake, Philos	Lanterns	Jan. 13, 1852	V.
9,461	Blake, William P	Safes, &c., iron lining for	Dec. 14, 1852	II.
8,964	Blakely, Henry	Locks, tumblers of	May 25, 1852	II.
9,162	Blanchard, Cornelius W	Looms for weaving figured fabrics	Aug. 3, 1852	III.
9,212	Blanchard, R. J	Stoves, cooking	Aug. 24, 1852	V.
8,670	Blasdell, Horatio	Grinding quartz, mill for	Jan. 20, 1852	XIII.
9,129	Blatchly, N	Ploughs	July 20, 1852	I.
9,429	Bliss, Jeremy W	Vice taper, attachment for converting the ordinary into a	Nov. 30, 1852	II.
8,954	Booth, Edmund	Saws in saw-mills, straining	May 18, 1852	XIV.
9,230	Booth, George R	Kilns for burning pottery	Aug. 31, 1852	XV.
9,163	Bourdon, Eugene	Gauges, pressure	Aug. 3, 1852	VIII.
8,651	Bowers, John W	Glass, &c., ornamented, painting on	Jan. 13, 1852	XVIII.
9,280	Bracket, Joseph	Shoes and gaiter boots	Sept. 28, 1852	XVI.
9,380	Bradeen, John G., assignor to J. G. Bradeen and G. Perkins	Sewing machines	Nov. 2, 1852	III.
9,130	Bradway, Abel	Shingles, machines for shaving	July 20, 1852	XIV.
9,090	Bradway, Abel, and E. Valentine	Bridges, construction of	July 6, 1852	IX.
9,229	Bradway, A., and E. Valentine	Saw sets	Aug. 31, 1852	XIV.
9,091	Briggs, John	Car seats	July 6, 1852	X.

8,751	Bristol, Albert G., and Joel C. Jackson	Wheels, cast-iron car	Feb. 24, 1852	X.
9,246	Brenner, Frederick	India-rubber, preserving	Sept. 7, 1852	IV.
8,852	Brownson, William C.	Saw-mills	Apr. 6, 1852	XIV.
9,446	Brown, C. B.	Harvesters, grain and grass	Dec. 7, 1852	I.
8,680	Brown, George, assignor to G. Brown and J. Monroe	Piano-forte action	Jan. 27, 1852	XVIII.
9,176	Brown, S.	Gates, double	Aug. 10, 1852	IX.
9,092	Brown James S.	Turning engines	July 6, 1852	XIV.
9,311	Brown, Lucian A., and Hubbard Bigelow, assignors to Henry K. W. Welch.	Churns	Oct. 5, 1852	I.
9,364	Bucher, Nicholas	Planes, edge for shoemakers'	Nov. 2, 1852	XIV.
9,426	Buck, Martin, James H. Buck, Aaron H. Cragin, and Franklin A. Tenny, assignors to Aaron H. Cragin.	Printing presses	Nov. 23, 1852	XVIII.
9,270	Bucklin, Theodore G.	Iron, coating with copper	Sept. 21, 1852	II.
8,935	Buel, Abel B.	Car seats, railroad	May 11, 1852	X.
8,853	Buel, Julia T.	Fish, spinning bait for catching	Apr. 6, 1852	XXII.
9,215	Bugbee, Aurin	Signals, railroad	Aug. 24, 1852	IX.
9,381	Bullock, William	Planters, seed	Nov. 2, 1852	I.
9,438	Bunker, Robert	Pail bails, &c., machinery for bending	Dec. 7, 1852	II.
8,936	Burns, William	Meat cutters	May 11, 1852	XVII.
8,625	Bushnell, Upton	Cheeses, modes of covering	Jan. 6, 1852	I.
8,682	Butler, Egbert T.	Mill spindles	Jan. 27, 1852	XIII.
8,837	Butler, Frederick M.	Trusses	Mar. 30, 1852	XX.
9,228	Butler, Lester	Washboards	Aug. 31, 1852	XVII.
9,294	Butler, William	Vice	Oct. 5, 1852	II.
8,937	Byler, Jacob R., and George W. Leusenick	Faucets, measuring	May 11, 1852	XI.
8,734	Callon, Edward	Compositions, explosive, for blasting rocks	Feb. 17, 1852	IV.
9,193	Camp, Mortimer M.	Ventilators	Aug. 17, 1852	V.
9,500	Canby, Samuel	Winnowing machines	Dec. 28, 1852	I.
8,735	Card, John	Fences	Feb. 17, 1852	IX.
9,012	Carncross, Jacob C.	Paddle wheels, valves or gates for oblique float	June 15, 1852	VII.
9,112	Carpenter, Seth P.	Nails, instrument for driving in difficult places	July 13, 1852	XVI.
8,965	Carpenter, W. B., assignor to W. D. Salisbury and S. Y. D. Arrowsmith.	Swivel watch chain	May 25, 1852	XVIII.
9,480	Carn, William S.	Water closets	Dec. 21, 1852	XXII.
9,131	Carson, Alfred	Motion, method of converting reciprocating rotary into reciprocating rectilinear.	July 20, 1852	XIII.
8,736	Carter, Egbert P.	Railroad gates	Feb. 17, 1852	X.
8,716	Cary, A. W.	Coupling hose	Feb. 10, 1852	XI.
9,178	Case, Jarvis	Mills, cider	Aug. 10, 1852	XIII.
9,428	Caswell, John, assignor to Archibald C. Powell	Screwing bolts, &c., machinery for	Nov. 30, 1852	II.
9,199	Catlin, Henry W., administrator of Alexander Catlin	Stone, machines for dressing	Aug. 10, 1852	XV.
9,382	Chadwick, William P.	Presses, oil	Nov. 9, 1852	XII.
9,353	Chamberlain, Dexter H.	Drill or bit, stock	Oct. 26, 1852	II.
8,966	Chambers, John B.	Mortising machines	May 25, 1852	XIV.
9,400	Chichester, Lewis S.	Flax pullers	Nov. 15, 1852	I.
8,700	Chichester, Lewis S.	Hemp brakes	Feb. 3, 1852	III.
9,165	Clark, Francis N.	Tally board	Aug. 3, 1852	XXII.
8,994	Clark, Terrence	Glass, plate and window, manufacture of	June 8, 1852	XV.
8,671	Clement, Edwin B.	Churns	Jan. 20, 1852	I.
9,316	Clement, William H.	Sugar pans, scumming apparatus for	Oct. 12, 1852	IV.
9,315	Clement, William H.	Sugar-boiling apparatus	Oct. 12, 1852	IV.
8,979	Cleveland, Charles	Pen-holders, fountain	June 1, 1852	XVIII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,883	Clinton, Thomas G	Mattresses	Apr. 20, 1852	XVII.
9,469	Clow, Charles N., Charles, and Abram	Scythe snaths	Dec. 14, 1852	I.
9,013	Cochran, John W	Mill for crushing quartz	June 15, 1852	XIII.
8,854	Cochran, John W	Stone-cutting machines	Apr. 6, 1852	XV.
9,441	Coe, Charles W	Drilling machines	Dec. 7, 1852	II.
8,709	Coleman, William and Stephen G	Ship's block	Feb. 3, 1852	VII.
8,752	Collins, John J. G	Valve motion, duplex eccentric	Feb. 24, 1852	VI.
9,439	Colver, Lewis W	Planters, seed	Dec. 7, 1852	I.
9,048	Colvin, Merrill	Radiators, heat	June 22, 1852	V.
9,014	Compton, William	Piano-fortes	June 15, 1852	XVIII.
9,213	Conant, Hezekiah	Lasting boots, instruments for	Aug. 24, 1852	XVI.
9,194	Conklin, John, W. H. L. Lidman, and E. Whitner	File-cutting machinery	Aug. 17, 1852	II.
8,626	Cook, George	Carriage curtain, lock for	Jan. 6, 1852	X.
9,166	Cook, H. P	Stereotype plates, casting	Aug. 3, 1852	XVIII.
9,146	Cook, James C	Button backs, machines for forming	July 27, 1852	XXI.
8,786	Cook, Samuel	Flour bolts	Mar. 9, 1852	XIII.
9,339	Cooper, Lewis	Lime and manure spreading	Oct. 19, 1852	I.
8,855	Cooper, M. T	Doors, apparatus for closing	Apr. 6, 1852	II.
8,681	Copeland, A. H	Sand-paper holder	Jan. 27, 1852	XXII.
8,995	Cormack, John A. and George	Oakum, processes for preparing	June 8, 1852	III.
8,719	Cornell, M. H	Horse powers	Feb. 10, 1852	XIII.
8,701	Craig, John A	Grass burner	Feb. 3, 1852	I.
8,718	Crain, Smith	Grinding quartz, mill for	Feb. 10, 1852	XIII.
9,440	Cramer, R. S., and C. C. Blossom	Saw gummers	Dec. 7, 1852	II.
9,049	Crane, Aaron	Horse powers	June 22, 1852	XIII.
8,797	Crawford, Benjamin	Gauge pressure	Mar. 16, 1852	VI.
8,787	Crawford, Benjamin	Gauge, water of boilers, &c	Mar. 19, 1852	VI.
8,737	Crawford, John M	Chains, machinery for making	Feb. 17, 1852	II.
8,647	Creighton, James R	Blind and shutter operator	Jan. 13, 1852	II.
9,231	Creighton, James R	Blind operator and fastener	Aug. 31, 1852	II.
9,066	Crooker, Matthew A	Propelling vessels	June 29, 1852	VII.
9,050	Cross, Abraham V	Wagons, dumping	June 22, 1852	X.
8,778	Crossby, Thomas	Carpets	Mar. 16, 1852	III.
8,838	Crum, John	Screw blanks, rivets, &c., machinery for shaving the heads of	Mar. 30, 1852	II.
8,702	Cumberland, John	Planing machines, feeders for	Feb. 3, 1852	XIV.
9,180	Curtis, M. S., and Edgar St. John	Frogs, railroad, method of securing movable points of	Aug. 10, 1852	X.
9,271	Daniels, Reuben	Drilling, hand, machine	Sept. 21, 1852	II.
9,501	Danré, George, P. Nicholas, and F. Lopez	Gas, illuminating, process of making	Dec. 28, 1852	IV.
8,996	Darling, Cook	Cow catcher	June 8, 1852	X.
8,719	Davies, Thomas A	Railroads, mode of preventing collisions on	Feb. 10, 1852	X.
8,938	Davis, Abbott R	Brushes, manufacture of	May 11, 1852	XVII.
8,919	Davis, Lewis H., assignor to J. A. Dugdale	Lever jacks	May 4, 1852	XII.
9,399	Davis, Lewis H., and Samuel and Morton Pennock	Planters, seed	Nov. 16, 1852	I.
9,208	Davis, Washington F., assignor to B. Cornell	Paints, processes for making	Aug. 17, 1852	IV.
9,416	Davis, William F. and N	Churns, swinging	Nov. 23, 1852	I.

9,470	Dawson, Joel	Straw cutters	Dec. 14, 1852	I.
9,016	Dawson, William	Cigars, machines for making	June 15, 1852	XXII.
8,703	Day, Willard	Sewers, street	Feb. 3, 1852	IX.
8,939	De Bibory, L. S	Boilers, cooking	May 11, 1852	V.
8,770	Dechamps, F. O	Omnibus registers	Mar. 2, 1852	X.
9,167	De Corn, Louis	Compositions for preserving butter	Aug. 3, 1852	IV.
9,442	Degan, Francis	Hats	Dec. 7, 1852	III.
8,630	De Guinon, R. V	Lamps, camphene	Jan. 6, 1852	V.
9,317	Deleschuze, Charles	Distilling apparatus	Oct. 12, 1852	IV.
8,839	Demerit, John	Razor strops	Mar. 30, 1852	XXI.
9,383	Densmore, Jocl	Printing presses	Nov. 9, 1852	XVIII.
8,902	Dewey, Daniel S	Stuttle for weaving hair-cloth, &c	Apr. 27, 1852	III.
9,067	De Witt, Henry G	Last holder, revolving	June 29, 1852	XVI.
8,903	Dickson, Perry	Sleds, hold-back for	Apr. 27, 1852	X.
8,799	Dimpfel, F. P	Grate bars, construction of	Mar. 16, 1852	V.
9,068	Disbrow, Caleb R	Trucks, railroad car	June 29, 1852	X.
9,051	Dodge, Daniel	Nail, wrought, machinery	June 22, 1852	II.
8,997	Dodge, George H	Spinning frames, cop	June 8, 1852	III.
8,822	Dodge, Thomas H	Signals, marine	Mar. 23, 1852	VII.
9,384	Dodge, Thomas H	Signals, marine	Nov. 9, 1852	VII.
8,771	Donnell, George O	Chairs	Mar. 2, 1852	XVII.
9,017	Dusch, Peter	Wheels, cast-iron car	June 15, 1852	X.
8,884	Doyle, Thomas J	Winnowers	Apr. 20, 1852	I.
9,481	Dozier, A. S	Ventilator	Dec. 21, 1852	V.
9,232	Drake, John S	Legs, artificial	Aug. 31, 1852	XX.
8,967	Draper, S. W. and R. M	Stone-dressing machines	May 25, 1852	XV.
9,447	Drescher, Louis	Battery, galvanic	Dec. 7, 1852	VIII.
9,113	Duffy, James P	Caissons, cast-iron	July 13, 1852	IX.
9,250	Dunn, John G., and Alfred F. Hows	Composition of enamels	Sept. 7, 1852	IV.
9,018	Duryea, Townsend	Daguerreotype plates, polishing	June 15, 1852	XVIII.
9,502	Dutcher, E. and W. W	Looms, temples for	Dec. 28, 1852	III.
8,998	Eames, Albert	Spark deflector	June 8, 1852	X.
9,147	Eames, Albert	Stone-sawing, saws for	July 27, 1852	XV.
8,652	Eames, Albert, assignor to Charles T. Shelton	Stone, machines for dressing	Jan. 13, 1852	XV.
8,753	Earle, Absalom B	Straw cutters	Feb. 24, 1852	I.
9,132	Eastman, Robert, assignor to Seth Eastman	Stone, machine for dressing	July 20, 1852	XV.
9,181	Eaton, A. K	Tanning	Aug. 10, 1852	XVI.
9,168	Eccles, Samuel and James	Looms for weaving figured fabrics	Aug. 3, 1852	III.
8,870	Edgecomb, H. D., assignor of his interest to Ransom Crosby	Tonguing boards, machines for	Apr. 13, 1852	XIV.
8,905	Edson, Nathaniel T	Steering apparatus relief	Apr. 27, 1852	VII.
9,268	Egbert, S. L., and S. W. Green	Washing machines, or other purposes, connecting joint for	Sept. 14, 1852	XVII.
8,978	Eldridge, Daniel	Corn shellers	June 1, 1852	XIII.
9,281	Eliner, H. O	Saw gummer, jointed bed plate	Sept. 28, 1852	II.
8,754	Emery, Horace L	Horse powers, endless chain	Feb. 24, 1852	XIII.
9,443	Emmons, Phineas	Tonguing and grooving apparatus	Dec. 7, 1852	XIV.
8,738	Fagin, Lewis	Bran dusters	Feb. 17, 1852	XIII.
8,968	Falkenan, Albert and Morris, and Morris Pollak	Swivel hooks	May 22, 1852	XVIII.
9,279	Farmer, Moses G	Clocks, galvanic	Sept. 21, 1852	VIII.
8,920	Farmer, Moses G	Electro-magnetic alarm bells	May 4, 1852	VIII.
9,503	Farnum, John P., assignor to John P. Farnum, J. Jenkins, and C. B. Clark.	Cutting paper	Dec. 28, 1852	XVIII.
9,020	Farrand, Jehial T	Tubes, machinery for making sheet metal	June 15, 1852	II.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,955	Farrell, James W	Boilers, steam	May 18, 1852	VI.
9,417	Faulkner, Augustus	Pile wires, pincers for operating	Nov. 23, 1852	III.
8,885	Felton, Charles C	Sash stopper and fastener	Apr. 20, 1852	II.
8,684	Few, William, and Francis Armstrong	Valves, the relief, in partially condensing engines, mechanism for operating.	Jan. 27, 1852	VI.
9,233	Field, S., and C. W. Heald	Oil cans	Aug. 31, 1852	V.
9,471	Field, William	Forging metals, &c., machinery for	Dec. 14, 1852	II.
9,402	Field, William	Thimbles for rigging, &c., machines for making	Nov. 16, 1852	VII.
8,653	Fillbrun, Henry	Winnowing machines, shakers of	Jan. 13, 1852	I.
8,886	Finch, A. L	Wheels and axles of cars, protecting by encasing them	Apr. 20, 1852	X.
9,430	Finney, William C	Hoes	Nov. 30, 1852	I.
8,871	Fisher, Mark, and John H. Norris	Welding steel, &c., to cast iron, method of	Apr. 13, 1852	II.
9,247	Fitzgerald, Daniel	Harvesters, grain	Sept. 7, 1852	I.
9,182	Fitzgerald, Daniel, and John H. Smith	Harvesters, grain and grass	Aug. 10, 1852	I.
9,133	Flack, John J	Harness, cruppers for	July 20, 1852	XVI.
8,627	Flanders, J. F., assignor to F. Roys and E. Wilcox	Metal disk, machine for turning up the edges of sheet	Jan. 6, 1852	II.
9,019	Fleischel, Charles	Locks, alarm	June 15, 1852	II.
8,721	Forman, James H	Ploughs, shovel	Feb. 10, 1852	I.
9,462	Forest, James C., and George Baker	Trip hammers	Dec. 14, 1852	II.
9,295	Foster, Charles	Printing presses	Oct. 5, 1852	XVIII.
9,069	Foster, John T	Potato diggers and stone gatherers	June 29, 1852	I.
9,214	Foster, Walter K	Cheese, machine for cutting	Aug. 24, 1852	XVII.
9,318	Foulis, Robert	Gas, illuminating apparatus	Oct. 12, 1852	IV.
9,183	Fox, Jonathan	Carriages	Aug. 10, 1852	X.
9,052	French, James S	Planes, inclined, method of ascending	June 22, 1852	X.
8,887	Furgang, William F	Piano-fortes, organs, &c., keys of	Apr. 20, 1852	XVIII.
9,148	Fyler, Orsamus R	Churn and butter worker	July 27, 1852	I.
9,482	Gale, Warren	Straw cutters	Dec. 21, 1852	I.
9,021	Gambrill, Horatio N	Cotton yarn, preparing, for the manufacture of duck and other coarse fabrics.	June 15, 1852	III.
9,070	Garachon, Francis	Lock	June 9, 1852	II.
9,169	Gardner, Mitchel C	Screw-cutting stocks, adjusting the chasers in	Aug. 3, 1852	II.
8,628	Garretson, Mahlon	Harvesters, clover	Jan. 6, 1852	I.
9,444	Gates, Stephen	Furnaces, hot-air	Dec. 7, 1852	V.
9,403	Gates, William A	Planters, cotton seed	Nov. 16, 1852	I.
9,483	Gates, William A	Ploughs	Dec. 21, 1852	I.
9,445	Gaylord, Edward L	Carpet-bag frames, &c., machinery for bending	Dec. 7, 1852	II.
9,022	Geminder, Albert and George	Organs	June 15, 1852	XVIII.
9,463	Gest, Joseph H	Rollers, field, for cutting stalks and weeds	Dec. 14, 1852	I.
9,114	Gilbert, Joseph G	Threshing machines	July 13, 1852	I.
9,184	Gilliland, John	Lenses, glass, manufacture of	Aug. 10, 1852	VIII.
9,023	Goddard, Kingston	Axles, carriage	June 15, 1852	X.
9,361	Goffin, F. C	Locks	Oct. 26, 1852	II.
9,376	Goffin, F. C	Vault and safe doors, &c., method of securing	Nov. 2, 1852	II.
9,319	Goodyear, Charles	India-rubber bat cloth, modes of making	Oct. 12, 1852	IV.

9,170	Goolman, William P., and William Holtselaw, jr.	Scales for weighing	Aug. 3, 1852	XII.
8,672	Goulding, Henry	Drilling stones, machines for	Jan. 20, 1852	XV.
9,171	Goulding, John	Looms, jaequard	Aug. 3, 1852	III.
9,024	Goulding, John	Looms, the motion of the lay in	June 15, 1852	III.
9,234	Gordon, George P.	Printing press	Aug. 31, 1852	XVIII.
9,448	Grant, George	Hinge for moulders' flasks	Dec. 7, 1852	II.
9,093	Gridley, J. B.	Bridges, construction of	July 6, 1852	IX.
9,195	Griffiths, Robert	Chairs, wrought iron railroad, machine for making	Aug. 17, 1852	IX.
8,729	Grimes, William C	Gauge, steam and water	Feb. 10, 1852	VI.
9,242	Guard, Chauncy H.	Wheels, carriage, machines for making	Sept. 7, 1852	X.
9,342	Guernsey, Lucius T.	Printing presses	Oct. 19, 1852	XVIII.
9,320	Gustin, John S.	Elcctro-magnetic engines	Oct. 12, 1852	VIII.
9,291	Gustin, John S.	Eleetro-magnetie engines	Sept. 28, 1852	VIII.
9,321	Guthrie, Alfred	Valves, safety	Oct. 12, 1852	VI.
9,404	Hadaway, J. B. S.	Sash stopper and fastener	Nov. 16, 1852	II.
9,296	Haldeman, D	Planters, seed	Oct. 5, 1852	I.
8,889	Hale, Daniel	Spikes, machines for drawing	Apr. 20, 1852	X.
9,272	Hall, J. H., and John Lowrey	Collars, horse	Sept. 21, 1852	XVI.
9,135	Hall, William	Brakes, railroad ear	July 20, 1852	X.
8,873	Hamilton, James	Casks, machinery for making	Apr. 13, 1852	XIV.
8,840	Hamilton, James	Dredging machines	Mar. 30, 1852	IX.
8,872	Hamilton, James	Sawing, mills for curvilinear	Apr. 13, 1852	XIV.
9,322	Hamilton, Walter	Seaming, double, machines	Oct. 12, 1852	II.
9,243	Hammer, Adolph	Refrigerators of wort	Sept. 7, 1852	XVII.
9,449	Hammit, John T	Chairs	Dec. 7, 1852	X.
8,800	Hammit, John T	Bedsteads, sofa	Mar. 16, 1852	XVII.
9,115	Hand, Furman, jr.	Shingle machines	July 13, 1852	XIV.
9,418	Harmon, E. C.	Type-setting, spaces for	Nov. 23, 1852	XVIII.
9,297	Harrison, Alexander	Grates, rotary stove	Oct. 5, 1852	V.
8,755	Harrison, Alexander	Ink, vessels for making	Feb. 24, 1852	IV.
9,343	Hart, Edson	Planters, seed	Oct. 19, 1852	I.
9,419	Hartell, W., and J. Lancaster	Heat, mode of generating	Nov. 23, 1852	V.
9,248	Haskins, James P.	Salt, eommon, manufacture of	Sept. 7, 1852	IV.
8,648	Haussknecht, Gustavus L	Carriages, running gear of	Jan. 13, 1852	X.
9,259	Hawks, Charles W	Printing presses	Sept. 14, 1852	XVIII.
8,685	Hays, John P	Ranges, cooking	Jan. 27, 1852	V.
8,631	Hayden. Peter P. R.	Chairs, railroad, manufacture of	Jan. 6, 1852	IX.
9,149	Henderson, Thomas	Harness, fastening for	July 27, 1852	XVI.
8,773	Henson, William	Looms, knitting	Mar. 2, 1852	III.
9,420	Hess, George	Iron fences, mode of fastening the palings to the rails in	Nov. 23, 1852	II.
8,632	Hess, George, assignor to Sylvanus Skinner	Railings, iron	Jan. 6, 1852	IX.
8,739	Hildreth, Abel	Bran dusters	Feb. 17, 1852	XIII.
9,025	Hill, Selah, and Charles M. Dupuy, jr.	Derricks	June 15, 1852	XII.
9,249	Henricks, Carl	Acid, sulphuric, manufaeture of	Sept. 7, 1852	IV.
9,464	Hinton, Robert	Casters, ball, manufacture of	Dec. 14, 1852	II.
9,273	Hobart, Seth L	Wardrobes, portable	Sept. 21, 1852	XVII.
8,704	Hochstrasser, Henry, and A. Masson	Door spring	Feb. 3, 1852	II.
8,722	Hodge, Amos	Switches, railroad	Feb. 10, 1852	VII.
8,979	Hodge, Nehemiah	Wheels, railroad ear	June 1, 1852	X.
9,054	Hodge, Nehemiah	Car, foot	June 22, 1852	X.
9,344	Hodge, Nehemiah	Bilge water, &c., apparatus for elevating and discharging	Oct. 19, 1852	X.
9,365	Hodgkins, Christopher, assignor to Nehemiah Hunt	Sewing machines	Nov. 2, 1852.	III.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,740	Hoit, L. B.	Looms, stop motion of	Feb. 17, 1852	III.
8,921	Hollingsworth, Christopher	Washing machines	May 4, 1852	XVII.
8,730	Holly, Birdsill, assignor to Silas Hewit, Edward S. Latham, Birdsill Holly, and Abel Downs.	Brakes, railroad car	Feb. 10, 1852	X.
9,094	Holly, Birdsill	Planes, hand	July 6, 1852	XIV.
8,723	Holm, Ferdinand	Baths, portable shower	Feb. 10, 1852	XX.
8,948	Holmes, Jonas, and Ephraim French	Carding by which variegated slivers are produced	May 18, 1852	III.
9,260	Homan, Herman H	Lightning rods	Sept. 14, 1852	VIII.
9,484	Hopkins, L. E.	Hat bodies, machinery for manufacturing	Dec. 21, 1852	III.
9,450	Hopkins, Lansing E	Hat bodies, machines for manufacturing	Dec. 7, 1852	III.
9,215	Hopkins, S. D.	Bed for invalids	Aug. 24, 1852	XVII.
8,940	Horne, Jos. B., and John R	Soldering in a vacuum, apparatus for	May 11, 1852	II.
8,922	Hotchkiss, Andrew	Wrench, adjustable	May 4, 1852	II.
9,072	Hotchkiss, Gideon	Mill spindle, hanging steps of	June 29, 1852	XIII.
9,172	Hough, Ezra	Ox yoke	Aug. 3, 1852	I.
9,505	House, R. E.	Telegraph, magnetic printing	Dec. 28, 1852	VIII.
9,465	Houston, Joseph U	Picks, stone	Dec. 14, 1852	XIII.
9,141	Houston, J., and E. Ross	Brakes, railroad car	July 20, 1852	X.
9,185	Howard, Charles	Motion, method of converting reciprocating into rotary	Aug. 10, 1852	XIII.
8,824	Howard, Charles	Swingle-trees	Mar. 23, 1852	X.
8,823	Howarth, John	Planing-trees	Mar. 23, 1852	X.
9,282	Howe, George	Piano-forte action	Sept. 28, 1852	XVIII.
9,323	Hughes, James	Hominy mills	Oct. 12, 1852	XIII.
9,385	Hulbert, Abijah	Vises, jaw-turning	Nov. 9, 1852	II.
9,283	Hunt, Charles H	Spinning machines, throstle	Sept. 28, 1852	III.
9,359	Huntley, Hosea H., assignor to David T. Woodrow	Stove, cooking	Sept. 28, 1852	V.
8,686	Huse, Samuel	Metres, water	Jan. 27, 1852	XI.
9,472	Hussey, Zimri	Club-feet, apparatus for the cure of	Dec. 14, 1852	XX.
9,026	Iles, Charles, assignor to E. H. Ashcroft, assignor to E. H. Ashcroft and George Savage.	Stone, imitation	June 15, 1852	XV.
8,633	Insley, Henry E	Daguerreotype pictures	Jan. 6, 1852	XVIII.
8,687	Isbister, Caleb	Nail-plate feeder	Jan. 27, 1852	II.
9,298	Jackson, Robert M.	Planters, seed	Oct. 5, 1852	I.
9,136	Jacob, Clark	Hullers, rice	July 20, 1852	I.
9,150	Jacob, Charles E.	Escapement, duplex	July 27, 1852	VIII.
9,357	Jacob, Charles E	Watch keys	Oct. 26, 1852	VIII.
9,345	Jagger, Ira	Water wheels	Oct. 19, 1852	XI.
9,027	Jarossen, Leon	Archil, preparation of	June 15, 1852	IV.
8,874	Jenks, B. H., and R. B. Goodyear, assignors to B. H. Jenks	Looms for weaving figured fabrics	Apr. 13, 1852	III.
9,379	Jenks, Lemuel P., assignor to Joseph W. Page, assignor to George Arthur Gardner.	Stone, drilling-machines for	Nov. 2, 1852	XV.
8,941	Jenkins, James	Printing oil-cloths, block for	May 11, 1852	XVIII.
9,414	Jennings, H. T., C. S. Collier, and T. P. How, assignors to H. T. Jennings, C. S. Collier, Amingo Beardsley, and Allen Hemmingway.	Cordage machinery	Nov. 16, 1852	III.

9,073	Johnson, Jasper	Bedstead fastening	June 29, 1852	XVII.
9,095	Johnson, Jasper	Hubs, &c., patterns for metal	July 6, 1852	II.
8,649	Johnson, John, assignor to Elias Johnson	Piled fabrics, apparatus for cutting the pile of	Jan. 13, 1852	III.
	Johnson, Cox, and Fuller, assignees. (*See* James J. Dulley, assignor.)			
8,969	Johnston, George	Stills, worm, tubs for	May 25, 1852	IV.
9,074	Johnston, James I.	Moulding hollow ware, &c	June 29, 1852	II.
8,980	Jones, John	Copying, manuscript	June 1, 1852	XVIII.
9,173	Jones, John O	Horseshoe, elastic	Aug. 3, 1852	II.
9,485	Jones, J., and A. Lyle	Thresher, grain, and cleaners	Dec. 21, 1852	I.
9,405	Jones, Robert V	Blind and shutter operator	Nov. 16, 1852	II.
8,825	Joslin, William	Cordage, machines for making	Mar. 23, 1852	III.
8,757	Judd, Oliver B	Saw-mills	Feb. 24, 1852	XIV.
9,192	Kane, John W	Mill dress	Aug. 10, 1852	XIII.
9,261	Keeler, Charles, and James	Smut machines	Sept. 14, 1852	XIII.
9,324	Kellogg, Daniel	Presses for bundling flocculent and other substances	Oct. 12, 1852	XII.
8,634	Kellogg, Edward	Wool-picking machines	Jan. 6, 1852	III.
8,908	Kelsey, Alexander, assignor to James Cowles	Furnaces, warm-air	Apr. 27, 1852	V.
9,366	Kellsey, Franklin	Propellers, vibrating	Nov. 2, 1852	VII.
9,406	Kennedy, David	Tanning	Nov. 16, 1852	XVI.
9,029	Kennedy, William S	Saddles	June 15, 1852	XVI.
8,949	Kennison, George W.	Stoves	May 18, 1852	V.
9,451	Ketchum, Richard	Lock	Dec. 7, 1852	II.
9,325	Kidder, Walter	Gas regulators	Oct. 12, 1852	IV.
9,326	Kidder, Walter	Gas regulators	Oct. 12, 1852	IV.
9,327	Kidder, Walter	Gas regulators	Oct. 12, 1852	IV.
8,844	Killan, Harvey, and George Vallen.	Ploughs, gang	Mar. 30, 1852	I.
9,174	Kimball, Alpheus	Scythe fastenings	June 29, 1852	I.
8,635	Kimball, Hiram	Shovels, construction of	Jan. 6, 1852	I.
9,299	Kimball, V. P., and B	Spark arresters	Oct. 5, 1852	VI.
9,186	Kingsland, Jos., jr., and Norman White	Paper, sized, mode of drying	Aug. 10, 1852	III.
8,826	Kinman, Nathan	Packers, flour	Mar. 23, 1852	XIII.
9,452	Kinsley, Rhodolphus	Lock, pad	Dec. 7, 1852	II.
9,407	Kinsley, E. and D	Bottle-stopper	Nov. 16, 1852	XXII.
8,906	Klein. John F	Switches, railroad	Apr. 27, 1852	X.
9,284	Knowles, Hazard	Saw-mills	Sept. 28, 1852	XIV.
9,151	Kraber, Adam	Planters, seed	July 27, 1852	I.
8,879	Kraft, Benjamin	Brakes, railroad car	Apr. 20, 1852	X.
8,688	Kraft, Benjamin	Iron railings	Jan. 27, 1852	II.
9,055	Krausser, John	Harvesters, clover	June 22, 1852	I.
8,999	Krapp, Alfred, assignor to Thomas Prosser	Spoons, forks, &c., machinery for making	June 8, 1852	II.
9,367	Laidlaw, John	Gas meters	Nov. 2, 1852	IV.
8,910	Lamb, Andrew, and Wm. Alltoft Summers	Boilers, sheet, water-space stud brace for flues of	Apr. 27, 1852	VI.
8,856	Latham, Henry B	Collars, horse	Apr. 6, 1852	XVI.
9,217	Latimer, Charles	Telegraphs, signal	Aug. 24, 1852	VIII.
8,801	Latta, A. B.	Joints around glass tubes for philosophical apparatus	Mar. 16, 1852	VIII.
8,802	Lattimer, James	Ploughs, shovel	Mar. 16, 1852	I.
8,803	Laws, Thomas J	Gins, cotton	Mar. 16, 1852	III.
8,637	Lawrence, Richard S	Fire-arms, breech-loading	Jan. 6, 1852	XIX.
9,421	Lawton, Hiram	Wadding, machinery for making	Nov. 23, 1852	III.
9,159	Leavitt, Boyd C., assignor to J. S. Bishop and R. H. Libbey.	Compounds for uniting steel and iron	July 27, 1852	IV.
9,096	Leavitt, Charles	Mills, portable grain	July 6, 1852	XIII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,890	Lebby, N. H	Water, apparatus for raising	Apr. 20, 1852	XI.
8,781	Lee, Benjamin F	Bridging navigable streams	Mar. 2, 1852	IX.
9,196	Leeds, J., I. H. Oat, jr., and A. A. Oat, assignors to J. Leeds.	Spark arresters	Aug. 17, 1852	VI.
9,354	L'Hommedieu, Charles	Daguerreotype, gilding	Oct. 26, 1852	XVIII.
8,804	Lennig, Charles	Hydrosulphurets, treatment of, and manufacturing carbonates and sulphur compounds.	Mar. 16, 1852	IV.
8,725	Leonard, Wm. B	Gas, apparatus for regulating and measuring the flow of	Feb. 10, 1852	IV.
9,301	Letton, R. E	Piano-fortes, upright	Oct. 5, 1852	XVIII.
9,458	Levy, John, and Charles Jones	Glass, mode of frosting	Dec. 7, 1852	XV.
9,275	Lewis, Amza B	Rakes	Sept. 21, 1852	I.
8,655	Lewis, Harrison W	Planes, bevelling	Jan. 30, 1852	XIV.
8,774	Lewis, Lewis	Presses, cotton	Mar. 2, 1852	XII.
9,197	Lewis, Lewis	Presses, cotton	Aug. 17, 1852	XII.
8,775	Licbrick, Conrad	Locks, trunk, plates of	Mar. 2, 1852	II.
8,741	Lindsay, William H	Boilers, steam metres for	Feb. 17, 1852	VI.
9,060	Lindsay, William H	Metres, fluid	June 22, 1852	VI.
8,788	Lindsley, William	Corn-sheller	Mar. 9, 1852	I.
8,678	Linton, William	Brick kilns	Jan. 20, 1852	XV.
9,356	Lister, S. C., and G. E. Donisthrop	Wool, machinery for combing	Oct. 26, 1852	III.
9,216	Livermore, Benjamin	Lasting boots, instruments for	Aug. 24, 1852	XVI.
9,097	Livingston, Norman B	Churns	July 6, 1852	I.
8,705	Longbottom, Abram	Gas purifying apparatus	Feb. 3, 1852	IV.
9,187	Longmaid, William	Gold, minerals, reducing	Aug. 10, 1852	II.
9,056	Lougborough, William S	Axles, railroad car, divided	June 22, 1852	X.
9,198	Lounsberry, A. J	Truss, hernial	Aug. 17, 1852	XX.
9,422	Lucas, Heman S	Paints, processes, for preparing	Nov. 23, 1852	IV.
8,875	Macy, E. and S	Reeling machines	Apr. 13, 1852	III.
9,251	Magoon, Israel P	Locomotives, &c., feed-water of, apparatus for heating	Sept. 7, 1852	VI.
8,776	Maillefert, Benjamin	Blasting rocks under water	Mar. 2, 1852	IX.
8,891	Maish, Andrew	Refrigerators	Apr. 20, 1852	XVII.
9,276	Mallory, James E	Cutting paper, machine for	Sept. 21, 1852	XVIII.
9,138	Manning, William	Harvesters, grass	July 20, 1852	I.
9,423	Manny, John H	Harvesters	Nov. 23, 1852	I.
9,386	Mardock, Thomas	Saddles	Nov. 9, 1852	XVI.
9,328	Mardock, Thomas, and William C. Kellar	Harness, saddle trees	Oct. 12, 1852	XVI.
8,970	Marsh, David	Flour bolts	May 25, 1852	XIII.
8,815	Marshall, Hickford, and Seth S. Cook, assignor to John Bostwick, jr., and Elbert White.	Chain, jack, machinery arrangement of	Apr. 27, 1852	II.
8,956	Marston, William H., and Frederick Goodell	Cartridges for breech-loading guns	May 18, 1852	XIX.
9,116	Martin, Joseph P	Brakes, railroad car	July 13, 1852	X.
9,302	Martin, Joseph P	Clothes, machines for wringing	Oct. 5, 1852	XVII.
8,971	Mason, William H	Oils, lubricating	May 25, 1852	IV.
8,898	Mathews, Nathan, assignor to Richard Edwards, David A. Morris, and Nathan Mathews.	Circle, plate, roses, &c., with dove-tailed grooves, devices for casting.	Apr. 20, 1852	II.
8,656	Maxfield, Charles A	Looms for weaving piled fabrics	Jan. 13, 1852	III.

9,218	Maxwell, Rufus	Churns	Aug. 24, 1852	I.
8,957	Maynard, Edward	Swings	May 18, 1852	XXII.
9,075	McCarty, Henry	Sheet iron while in process of manufacturing, method of heating	June 29, 1852	II.
9,303	McCarty, James	Puddling iron, &c., apparatus for	Oct. 5, 1852	II.
8,923	McClintic, John	Safety-valves, differential	May 4, 1852	VI.
	McClure, Samuel, assignee. (*See* Ripley & Vedder.)			
9,152	McCord, William	Soaps	July 27, 1852	IV.
8,827	McCray, Thomas H	Smut machines	Mar. 23, 1852	XIII.
9,454	McCreary, John	Type, wooden, manufacturing	Dec. 7, 1852	XVIII.
9,304	McDonald, James, and John	Piano-fortes	Oct. 5, 1852	XVIII.
9,329	McElfatrick, Samuel	Railroads, apparatus for transporting trains on inclined planes of	Oct. 12, 1852	X.
8,829	McIlhenney, William S	Teeth, artificial, manufacturing	Mar. 23, 1852	XX.
8,841	McKinlay, Peter	Hullers, rice	Mar. 30, 1852	I.
9,031	McLagan, William	Harvesters	June 15, 1852	I.
9,117	McLaughlin, John	Churns	July 13, 1852	I.
8,673	McLaughlin, John	Washing machines	Jan. 20, 1852	XVII.
8,924	McLaughlin, Thomas G	Brakes, railroad car	May 4, 1852	X.
8,689	Miller, A. S	Switches, railroad	Jan. 27, 1852	X.
9,139	Miller, Charles	Sewing machines	July 20, 1852	III.
9,076	Miller, Samuel N	Anchor, compound	June 29, 1852	VII.
8,742	Millholland, James	Boilers, steam	Feb. 17, 1852	VI.
9,219	Mills, Cassius A	Engine, rotary, abutment motion for reversible	Aug. 24, 1852	VI.
9,153	Minkler, Simeon	Track clearer, railroad	July 27, 1852	X.
9,057	Minniss, Theodore S	Mill-spindles, steps and bearings of	June 22, 1852	XIII.
8,674	Moeser, Henry	Printing presses, hand	Jan. 25, 1852	XVIII.
9,424	Montague, Charles	Printing presses	Nov. 23, 1852	XVIII.
9,160	Moore, Cyrus, assignor to F. S. Noyes	Brooms	July 27, 1852	XVII.
9,032	Moore, Frederick H	Blind rods, machine for wiring	June 15, 1852	II.
8,777	Moore, Hiram W	Wheels, cast-iron car	Mar. 2, 1852	X.
8,726	Morris, Ephraim	Governors	Feb. 10, 1852	XIII.
8,706	Morris, Ephraim	Valves of oscillating engines upon their seats, method of keeping the.	Feb. 3, 1852	VI.
9,486	Morrison, William H	Engines which use steam expansively, equalizing apparatus for	Dec. 21, 1852	VI.
8,772	Moulton, Orson	Wheels, cast-iron car	Mar. 2, 1852	X.
8,981	Mount, William S	Violins	June 1, 1852	XVIII.
9,235	Mudge, Jarvis T	Washing machine	Aug. 31, 1852	XVII.
8,911	Murrow, Freeman	Brushes	Apr. 27, 1852	XVII.
9,033	Naracon, William H	Mill spindles, hanging	June 15, 1852	XIII.
8,942	Newell, Robert	Scales, platform	May 11, 1852	XII.
9,034	Newhouse, A. S	Bedstead fastenings	June 15, 1852	XVII.
8,690	Nickerson, Charles V	Fire-arms	Jan. 27, 1852	XIX.
9,305	Nicholay, John G	Printing presses	Oct. 5, 1852	XVIII.
9,118	Noblet, Robert L	Shingle machines	July 13, 1852	XIV.
8,758	Norcross, Edmund D	Furnaces, air-heating	Feb. 24, 1852	V.
9,058	Norcross, Nicholas G	Planing machines	June 22, 1852	XIV.
8,982	North, H. S., and C. D. Skinner	Fire-arms, revolving breech	June 1, 1852	XIX.
9,408	Northrup, Joel G	Printing press	Nov. 16, 1852	XVIII.
8,795	Nott, Benjamin, assignor to J. P. Pepper	Door-knobs, manufacture of	Mar. 9, 1852	II.
8,759	Nott, Joel B., and William S. Kelley	Water wheels	Feb. 24, 1852	XI.
8,638	Nuckolls, Nathaniel	Straw-cutters, feeding rollers in	Jan. 6, 1852	I.
8,972	Null, Samuel	Hominy machines	May 25, 1852	XIII.
9,306	Nutting, Mighill	Window-sashes, expanding	Oct. 5, 1852	IX.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
9,468	Nyeum, Henry	Planters, seed	Dec. 14, 1852	I.
8,657	O'Brien, Bartholomew	Candy, sugar, machines for making	Jan. 13, 1852	IV.
8,805	Olcott, Austin	Lamps, Argand, burners for	Mar. 16, 1852	V.
8,858	Olds, William B	Coat forms	Apr. 6, 1852	XXI.
9,000	Orelup, John, assignor to Isaiah Blood, A. G. Goff, and George R. Thomas.	Axes, process of making	June 8, 1852	II.
8,658	Osgood, Horatio B	Attaching pieces of metal to each other by casting, apparatus for	Jan. 13, 1852	II.
8,743	Osgood, R. T	Harvesters, grain and grass	Feb. 17, 1852	I.
8,973	Otis, E. G	Trucks and brakes, railroad car	May 25, 1852	X.
9,368	Otstot, J. D	Saw gummers	Nov. 2, 1852	II.
8,606	Owen, J. Parsons	Bedsteads, machines for cutting screws on rails and posts of	Mar. 16, 1852	XVII.
9,099	Oxland, Robert and John	Sugar, processes for defecating	July 6, 1852	IV.
9,290	Packard, Isaac T	Reed instruments, bellows for	Sept. 28, 1852	XVIII.
8,842	Pagett, W. F	Plough, shovel	Mar. 30, 1852	I.
9,119	Paine, Henry M	Light, benzole	July 13, 1852	V.
8,645	Paine, H. M	Ventilating windows for railroad cars	Jan. 6, 1852	V.
9,200	Palmer, B. F	Legs, artificial	Aug. 17, 1852	XX.
8,744	Palmer, William R	Thresher, grain, feeding apparatus for	Feb. 17, 1852	I.
8,676	Pannabacher, Jesse	Grindstones, self-sharpening	Jan. 20, 1852	XIV.
8,909	Parker, Ephraim, assignor to Alfred L. Parker	Tobacco, machines for pressing	Apr. 27, 1852	XXII.
8,691	Parker, Luther B	Shingle machine	Jan. 27, 1852	XIV.
8,745	Parker, Robert W	Pulleys, banding	Feb. 17, 1852	XIII.
8,830	Parish, Stephen E., assignor to Edwin B. Clayton & Sons	Books, machines for paging	Mar. 23, 1852	XVIII.
9,100	Patton, James M., and William F. Fergus	Planing, cutterheads for	July 6, 1852	XIV.
9,506	Page, Edward	Bolts, &c., machinery for heading	Dec. 28, 1852	II.
8,675	Pearl, Oliver, and Henry P. Chandler	Spinning machinery	Jan. 20, 1852	III.
9,001	Pease, James H	Lamps, reflector	June 8, 1852	V.
8,983	Peck, G. S	Smut machine	June 1, 1852	XIII.
9,077	Peck, Jesse	Mortar, mixing	June 29, 1852	XV.
9,101	Peer, John W	Cordage machines	July 6, 1852	III.
9,346	Pemberton, Henry	Soda ash and carbonates of soda, making	Oct. 19, 1852	IV.
9,210	Perkins, N., assignor to Samuel Dow	Buttons, cord, manufacturing	Aug. 17, 1852	XXI.
9,154	Perkins, Samuel M	Coats, block for stretching	July 27, 1852	XXI.
8,692	Perley, Charles	Ships' davits	Jan. 27, 1852	VII.
9,040	Perry, David, assignor to Franklin and J. W. Slaughter	Cordage, machines for making	June 15, 1852	III.
9,155	Perry, Samuel M	Car seats, railroad	July 27, 1852	X.
8,925	Peters, Charles, and William Fetter	Anvil	May 4, 1852	II.
9,059	Peters, John R., jr	Flocks, machines for preparing	June 22, 1852	III.
8,707	Phillips, David	Axletree arms	Feb. 3, 1852	X.
9,389	Phillips, L. D	Steering submarine vessels	Nov. 9, 1852	VII.
8,693	Plato, John T	Yoke, neck	Jan 27, 1852	X.
8,950	Platt, Charles H	Ship's block	May 18, 1852	VII.
8,926	Plimpton, James L	Grinding conical-edged knives, machinery for	May 4, 1852	II.
9,466	Polley, Clark	Pumps, endless chain, buckets for	Dec. 14, 1852	XI.
9,277	Pond, Daniel F	Crayon rubber	Sept. 21, 1852	XVIII.

9,292	Poole, John M., assignor to J. Pascy and James Scott	Leather, machines for polishing	Sept. 28, 1852	XVI.
9,035	Potts, Joseph	Meat cutters	June 15, 1852	XVIII.
8,639	Pratt, Ulysses	Bleaching ivory, processes of	Jan. 6, 1852	IV.
9,278	Prosser, Richard, assignor to Thomas Prosser	Joint tube, application of a free, in circumstances where it is exposed to external pressure.	Sept. 1, 1852	II.
9,220	Pullinger, George	Rails, hand, machines for cutting	Aug. 24, 1852	IX.
8,860	Rait, David	Buttons, studs, &c	Apr. 6, 1852	XXI.
8,985	Rall, Daniel R	Wheels, cast-iron car	June 1, 1852	X.
9,086	Ramos, Don Juan, assignor to James G. Gallaher and Wm. F. Tirado.	Sugar, apparatus for boiling	June 29, 1852	IV.
9,087	Ramos, Don Juan, assignor to James G. Gallaher and Wm. F. Tirado.	Sugar, process for the manufacture of	June 29, 1852	IV.
9,370	Randall, Charles	Planters, seed	Nov. 2, 1852	I.
8,641	Rapp, Adam William	Pens, gold	Jan. 6, 1852	XVIII.
8,640	Rauch, John H	Pen and pencil cases	Jan. 6, 1852	XVIII.
9,201	Raudon, Calvin L	Yoke, neck, of horses	Aug. 17, 1852	I.
9,120	Reading, William	Corn shellers	July 13, 1852	I.
9,487	Ream, Jacob L	Harvesters, maize	Dec. 21, 1852	I.
9,036	Reany, Thomas	Ore stampers	June 15, 1852	II.
8,960	Reid, Thomas N	Ovens	May 18, 1852	V.
9,078	Remsen, H. R., and P. M. Hutton	Engines, locomotive	June 29, 1852	VI.
8,790	Reynolds, Ira	Planters, seed	Mar. 9, 1852	I.
8,694	Reynolds, Ira	Switches, railroad	Jan. 27, 1852	X.
8,677	Reynolds, Samuel G	Nail machines	Jan. 20, 1852	II.
8,959	Rhodes, Clarkson	Churns	May 18, 1852	I.
9,358	Rice, Augustus M., assignor to A. M. Rice and S. H. Lombard	Furnaces, hot-air	Oct. 26, 1852	V.
9,266	Richards, G. H., assignor to C. G. Plimpton	Forging machines	Sept. 14, 1852	II.
9,369	Richards, William T	Ferrules, wire, manufacture of	Nov. 2, 1852	II.
9,262	Richards, William T	Ferrules, wire, machinery employed in the manufacture of coiled	Sept. 14, 1852	II.
9,433	Richardson, Fortunatus E	Ploughs, construction of	Nov. 30, 1852	I.
9,188	Richardson, Samuel	Looms for weaving piled fabrics	Aug. 10, 1852	III.
9,360	Richmond, Appollos, assignor to A. C. Barstow & Co	Furnaces, hot-air	Oct. 26, 1852	V.
9,409	Richter, Professor Adolphus	Drawing, perspective, apparatus	Nov. 16, 1852	XVIII.
9,478	Ricketson, Lydoriann, administratrix of Henry H. Ricketson	Blubber, whale, machines for cutting	Dec. 14, 1852	XXII.
8,958	Rider, E. P	Cotton batting	May 18, 1852	III.
8,708	Rietsch, Franz G	Beer material, concentrated	Feb. 3, 1852	IV.
9,102	Rippon, William	Doors, double acting	July 6, 1852	IX.
9,332	Robb, James	Plough and fastening devices	Oct. 12, 1852	I.
9,333	Robb, James	Planters, seed	Oct. 12, 1852	I.
9,253	Robbins, Charles A., and Harvey Allen	Mail bags, air-tight	Sept. 7, 1852	XVI.
9,263	Robbins, Horace T	Loom, shuttle, guides to	Sept. 14, 1852	III.
8,807	Robbins, Horace T	Spinning machinery, connecting washers with spindles in	Mar. 16, 1852	III.
9,140	Roberts, Cyrus	Grain separators	July 20, 1852	I.
8,746	Roberts, Peter	Capstans	Feb. 17, 1852	VII.
9,307	Robertson, William H	Milling machine	Oct. 5, 1852	II.
9,103	Rogers, Enos	Valves, puppet, mode of grinding, while the engine is in motion	July 6, 1852	VI.
9,488	Rogers, S. W	Cut-off valve motion	Dec. 28, 1852	VI.
9,028	Rood, David, and Edwin Jenney, assignors to E. Jenney	Staves, machines for jointing	June 15, 1852	XIV.
9,003	Root, Frederick P	Cultivators, wheel	June 8, 1852	I.
9,004	Ross, James P	Planters, seed	June 8, 1852	I.
9,142	Royse, Pleasant E	Stone, machines for rubbing	July 20, 1852	XV.
8,747	Royse, Pleasant E	Harvesters	Feb. 17, 1852	I.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
9,104	Royse, P. E., and Ira Reynolds	Stone, machines for rubbing	July 6, 1852	XV.
9,005	Rugg, George H	Harvesters	June 8, 1852	I.
9,436	Ruggles, H. J	Stoves, cooking	Nov. 30, 1852	V.
8,642	Ruggles, Robert B., and Lemuel W. Serrell, assignors to Robert B. Ruggles.	Gold beater, mechanical	Jan. 6, 1852	II.
9,410	Ruggles, Stephen P	Printing presses	Nov. 16, 1852	XVIII.
9,221	Russell, David	Horse power	Aug. 24, 1852	XIII.
9,202	Russell, Jonathan	Legs, artificial	Aug. 17, 1852	XX.
9,371	Saddler, Manly C	Stove, cooking	Nov. 2, 1852	V.
9,425	Sadleir, David	Boot-trees	Nov. 23, 1852	XVI.
8,987	Solomon, John C. F	Fire-escape ladders	June 1, 1852	XXII.
8,892	Samuels, Jesse	Brick machines	Apr. 20, 1852	XV.
9,006	Sanders, Benjamin D	Planters, seed	June 8, 1852	I.
9,007	Sanders, Zenas	Rakes, hay	June 8, 1852	I.
9,037	Sanford, Gelston	Planters, seed, hand	June 15, 1852	I.
8,927	Sanford, Gelston, assignor to George A. Meacham	Churning machines	May 4, 1852	I.
9,434	Sanford, Horatio G	Knitting machines, rotary	Nov. 30, 1852	III.
9,079	Sanford, Nathaniel C	Skates	June 29, 1852	XXII.
8,660	Sanford, S. T	Punching sheets of metal, machinery for	Jan. 13, 1852	II.
9,334	Sargent, Rufus W	Lamps, spirit gas, burners for	Oct. 12, 1852	V.
8,661	Saterlee, Edward	Moulding in flasks, apparatus for	Jan. 13, 1852	II.
9,504	Saulnier, Pierre, assignor to J. T. Brnen	Planing metals, &c., mode of mounting the cutters of machines for	Dec. 28, 1852	II.
8,664	Sawyer, Joseph	Rattan, machines for splitting	Jan. 20, 1852	XXII.
9,038	Schnebly, William and Thomas	Harvesters	June 15, 1852	I.
8,748	Schnebly, William and Thomas	Weighing machines	Feb. 17, 1852	XII.
8,928	Schneider, Christen	Funnels	June 8, 1852	XI.
9,189	Schoenherr, John	Brakes, railroad car	Aug. 10, 1852	X.
9,285	Schroeder, Richard E	Brick-kilns	Sept. 28, 1852	XV.
9,121	Schoville, Hiram H	Wheels, cast-iron car	July 13, 1852	X.
9,489	Secly, Jesse N	Potato diggers	Dec. 21, 1852	I.
8,665	Seitz, Frederick	Mashing maize, improved process of	Jan. 20, 1852	IV.
8,695	Semple, Amzi C	Windlasses	Jan. 27, 1852	XII.
8,662	Senneff, Jacob	Heddles, metallic	Jan. 13, 1852	III.
9,122	Sergeant, Isaac A	Bedstead fastenings	Jan. 13, 1852	XVII.
9,476	Seymour, William H., assignor to Seymour & Morgan	Harvesters, grain and grass	Dec. 14, 1852	I.
8,779	Sharp, Theodore	Horse powers, endless chain	Mar. 2, 1852	XIII.
9,308	Sharps, Christian	Fire-arms, method of priming	Oct. 5, 1852	XIX.
8,845	Shaw, William	Bedstead fastenings	Mar. 30, 1852	XVII.
9,203	Shaw, William	Bedstead fastenings	Aug. 17, 1852	XVII.
9,156	Shaw, William C	Mortising machines	July 27, 1852	XIV.
8,663	Sherwood, Allen, and Avery Babbett	Turning prisms, &c	Jan. 13, 1852	XIV.
9,190	Sherwood, Benjamin	Hats	Aug. 10, 1852	XXI.
9,390	Shetler, Solomon	Horseshoe machinery	Nov. 9, 1852	II.
8,846	Sheward, James	Rat trap	Mar. 30, 1852	XXII.
8,760	Sickles, Frederick E	Cut-offs	Feb. 24, 1852	VI.

8,782	Sickles, Gerard	Clutches, friction	Mar. 2, 1852	XIII.
8,761	Sidle, Henry	Boring hubs for boxes, apparatus for	Feb. 24, 1852	XIV.
9,157	Siedhof, Charles	Lamps	July 27, 1852	V.
8,988	Sievier, Robert W	Looms for weaving piled fabrics without the figuring wires	Sept. 5, 1852	III.
9,391	Silver, Harvey	Twisting tubes in the formation of roving	Nov. 9, 1852	III.
8,876	Singer, Isaac M	Sewing machines	Apr. 13, 1852	III.
8,912	Sloan, Thomas J	Gauge float, feed regulator, &c., for steam boilers, &c	Apr. 27, 1852	VII.
9,222	Sloan, Thomas J	Screw, blanks, &c., wood mechanism for gripping	Aug. 24, 1852	II.
9,105	Sloan, Thomas J	Screws, &c., combination of cutters for threading wood	July 6, 1852	II.
9,223	Sloan, Thomas J	Screws, threading pointed wood	Aug. 24, 1852	II.
9,106	Sloan, Thomas J	Thermostat for regulating heat	July 6, 1852	V.
9,392	Slocum, G., and M. T. Sayles	Metal bars, machinery for crimping	Nov. 9, 1852	II.
9,347	Smead, Daniel W	Bedsteads	Oct. 19, 1852	XVII.
9,080	Smith, Albert M	Clasp, belt	June 27, 1852	XXI.
9,209	Smith, Erasmus, assignor to David Maydole	Bits to braces, fastener of	Aug. 17, 1852	II.
9,335	Smith, Erasmus	Water-wheels, packing	Oct. 12, 1852	XI.
9,309	Smith, Henry C	Window frames	Oct. 5, 1852	IX.
9,348	Smith, James D	Sash stopper and fastener	Oct. 19, 1852	II.
9,459	Smith, William H	Furnaces, slags of utilizing	Dec. 7, 1852	V.
8,974	Smolinski, Joseph	Cooking apparatus	May 25, 1852	V.
9,490	Snook, Thomas, and S. Hill	Lamps for locomotive engines	Dec. 21, 1852	V.
8,961	Soule, Charles R	Rakes, hay	May 18, 1852	I.
9,412	Southworth, D. H	Serving mallets	Nov. 16, 1852	VII.
8,893	Spaulding, H. C., and G. Stickney	Pumps, rotary	Apr. 20, 1852	XI.
9,287	Speer, A., and E. Marx	Piano-fortes, &c., sounding-boards of	Sept. 28, 1852	XVIII.
9,411	Speer, Cornelius	Card teeth, bracing and supporting	Nov. 16, 1852	III.
8,729	Speiker, Charles F	Gold, processes for dissolving	Aug. 10, 1852	II.
8,780	Speissegger, S. L	Brick machines	Mar. 2, 1852	XV.
9,204	Spence, George S. G	Furnaces, hot-air	Aug. 17, 1852	V.
9,393	Spence, George S. G	Range, cooking	Nov. 9, 1852	V.
9,473	Sprague, Harvey	Plough regulator	Dec. 14, 1852	I.
8,930	Spratt, James	Lightning rods	May 4, 1852	VIII.
9,008	St. John, John R	Soap boilers	July 6, 1852	IV.
9,224	Stanley, Edwin	Truck, railroad	Aug. 24, 1852	X.
8,808	Stearns, Daniel	Planing machines	Mar. 16, 1852	XIV.
9,236	Stearns, George S., and William Hodgson	Engine, steam, governor for	Aug. 31, 1852	VI.
8,989	Stebbins, Peter, and John Holmes	Trip hammers, vertical	June 1, 1852	II.
9,264	Stedman, Benjamin S	Portemonnaies, manufacture of	Sept. 14, 1852	XXI.
9,126	Stephenson, Marcus R., assignor to Edwin Holman	Locks, door	July 13, 1852	II.
8,862	Stillman, J. D. B	Harpoon	Apr. 6, 1852	II.
9,456	Stoddard, William	Shingle machines	Dec. 7, 1852	XIV.
8,831	Stoddard, William	Shingles, machines for jointing	Mar. 23, 1852	XIV.
9,288	Stow, Orson W	Tubes, sheet-metal, machinery for forming	Sept. 7, 1852	II.
8,913	Stowell, B. T	Cart, self-loading and dumping	Apr. 27, 1852	X.
8,877	Stowell, B. T., and A. Marcellus	Planters, seed	Apr. 13, 1852	I.
8,762	Strait, Hiram	Water-gun for extinguishing fires	Feb. 24, 1852	XI.
9,081	Stran, Thomas V	Bells, method of ringing	June 29, 1852	XXII.
9,394	Strawbridge, Henry H., and Daniel Tyson	Brick machines	Nov. 9, 1852	XV.
8,763	Strode, Thomas T	Winnowers and weighers, grain	Feb. 24, 1852	I.
8,863	Stubbs, Matthew	Eccentric, adjustable, mechanism for actuating an	Apr. 6, 1852	VI.
8,791	Sturges, J. S	Rakes, hay	Mar. 9, 1852	I.
8,792	Swan, A. L	Melodeons	Mar. 9, 1852	XVIII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
9,061	Swartz, David	Ploughs	June 22, 1852	I.
9,143	Sweeney, Peter	Tuyeres, water, pipes of	July 20, 1852	II.
8,727	Swett, James H	Crusher, quartz	Feb. 20, 1852	XII.
8,914	Swingle, Alfred, and Nehemiah Hunt	Steering apparatus	Apr. 27, 1852	VII.
9,457	Switzer, Jacob W	Screw drivers	Dec. 7, 1852	II.
8,996	Symmes, J. C	Shears	June 8, 1852	XXI.
8,878	Taft, George C	Boxes, opening, instrument for	Apr. 13, 1852	XXII.
8,943	Tatham, Benjamin	Lead pipe machinery	May 11, 1852	II.
8,710	Taylor, Henry D	Cars, railroad, running gear of	Feb. 3, 1852	X.
8,749	Taylor, J. C	Spoons for administering medicines	Feb. 17, 1852	XX.
8,944	Taylor, Timothy H	Tables	May 11, 1852	XVII.
8,990	Taymon, Benjamin J	Turning and polishing, machines for	June 1, 1852	XIV.
9,310	Terry, Silas P	Timepieces	Oct. 5, 1852	VIII.
9,349	Tukesberry, George P	Life-preserving seat	Oct. 19, 1852	VIII.
8,809	Thomas, William S	Cupping and breast glasses	Mar. 16, 1852	XX.
8,931	Thompson, Daniel H	Window-blind machinery	May 4, 1852	XIV.
8,697	Thompson, James H	File-cutting machines	Jan. 27, 1852	II.
8,864	Thompson, John	Grain separators	Apr. 6, 1852	I.
9,254	Thompson, Julius	Blow-pipe for dentists, &c	Sept. 7, 1852	XX.
8,865	Thompson, Sardis	Bootjack	Apr. 6, 1852	XVI.
8,847	Thomson, John	Wells, artesian, apparatus for boring	Mar. 30, 1852	IX.
8,975	Thurston, Stephen	Wheels, cast-iron car	May 25, 1852	X.
8,951	Tibbetts, J. V	Umbrellas	May 18, 1852	XXI.
8,666	Tolhurst, G. W	Planing machines	Jan. 20, 1852	XIV.
9,372	Townsend, Francis	Planters, seed	Nov. 2, 1852	I.
9,474	Trayser, Philip P	Spike machines	Dec. 14, 1852	II.
9,336	Trempor, John	Governors	Oct. 12, 1852	VI.
9,373	Trevitt, Constant S	Planters, seed	Nov. 2, 1852	I.
9,255	Tucker, Hiram	Marble, imitation of, preparing stone in	Sept. 7, 1852	XV.
9,507	Tucker, William	Looms, shuttles for	Dec. 28, 1852	III.
8,698	Turner, George William	Paper, making and sizing, machines for	Jan. 27, 1852	III.
8,915	Turner, Henry	Boxes for journals	Apr. 27, 1852	X.
9,144	Turner, James	Car coupling, railroad	July 20, 1852	X.
9,123	Turner, Jonathan S	Clocks, alarm	July 13, 1852	VIII.
8,811	Turton, William	Registers, hot-air	Mar. 16, 1852	V.
9,492	Underwood, William E	Fulling mills	Dec. 21, 1852	III.
8,866	Urmy, Jesse	Planters, seed	Apr. 6, 1852	I.
8,867	Valentine, John	Wheels, car, and rails	Apr. 6, 1852	X.
9,240	Van Ansdall, Henry	Electro-magnetic fire-alarm	Aug. 31, 1852	VIII.
8,784	Van Bunschoten, Isaac	Lamps, camphene	Mar. 2, 1852	V.
8,879	Van Doran, Francis	Planters, seed	Apr. 13, 1852	I.
8,667	Van Fossen, Thomas	Harvesters, grain	Jan. 20, 1852	I.
8,894	Van Holsen, William C	Gates, balance	Apr. 20, 1852	IX.
9,401	Van Riper, John A	Looms, carpet	Nov. 16, 1852	III.
9,009	Vedder, John J	Rat trap	Aug. 17, 1852	XXII.

8,711	Verleger, C. F	Carriages, running gear of	Feb. 3, 1852	X.
9,374	Vermillion, Henry	Planters, seed	Nov. 2, 1852	I.
9,082	Vervalen, R. A	Brick machine	June 29, 1852	XV.
8,945	Vine, William	Gold-beating machinery	May 11, 1852	II.
8,668	Virdin, W. W	Canal locks	Jan. 20, 1852	IX.
9,010	Wade, Robert M	Grease cocks	June 8, 1852	VI.
9,289	Wagner, J. Z. A	Omnibuses, registers for, and for other purposes	Sept. 28, 1852	X.
8,812	Walber, Thomas	Brakes, railroad car	Mar. 16, 1852	X.
9,205	Walber, Thomas	Hat bodies, machines for forming	Aug. 17, 1852	III.
9,158	Walcott, Halsey D	Cloth and other substances, graduated cutters for	July 27, 1852	XXI.
9,083	Walker, Albert	Bedstead, sofa	June 29, 1852	XVII.
9,225	Walker, Andrew J	Boilers, apparatus for feeding	Aug. 24, 1852	VI.
9,493	Walworth, Daniel, and Lucius Evans	Furnace, cinders, method of separating iron from	Dec. 21, 1852	V.
9,494	Walrorth, Caleb C	Irons, flat, steam	Dec. 21, 1852	XVII.
9,508	Ward, William E	Screw blanks, rivets, &c., method of heading	Dec. 28, 1852	II.
9,107	Ware, Elijah	Spring, pneumatic	July 6, 1852	X.
8,813	Warren, Ira	Inhaling powders, instruments for	Mar. 16, 1852	XX.
9,084	Waterbury, Charles	Cars, railroad	June 29, 1852	X.
9,509	Waterman, Henry	Boilers, steam, safety apparatus for	Dec. 28, 1852	VI.
8,669	Waters, John	Mattresses, spring	Jan. 20, 1852	XVII.
9,108	Watson, William	Planing machines	July 6, 1852	XIV.
8,764	Weed, T. E	Dryers, grain	Feb. 24, 1852	V.
8,880	Weeks, George S	Paddle-wheel, oblique bucket	Apr. 13, 1852	VII.
8,962	Welch, B. S	Cements	May 18, 1852	IV.
9,375	Wells, David	Ventilators	Nov. 2, 1852	V.
9,475	Wells, Moses D	Planters, seed	Dec. 14, 1852	I.
8,895	Wells, William T	Tailors' measures	Apr. 20, 1852	XXI.
9,337	Welton, Arad W	Buttons, glass	Oct. 12, 1852	XXI.
8,712	Wheeler, Norman W	Steering apparatus	Feb. 3, 1852	VII.
9,191	Whipple, Cullen	Screws, machinery for threading wood	Aug. 10, 1852	II.
9,477	Whipple, Cullen, assignor to New England Screw Company	Screw blanks, mechanism for pointing and threading in the same machine.	Oct. 12, 1852	II.
9,460	Whipple, Cullen, assignor to New England Screw Company	Screws, &c., wood, machinery for making	June 7, 1852	II.
9,110	Whipple, Cullen, assignor to New England Screw Company	Screw-thread machinery	May 15, 1852	II.
8,896	Whipple, R. B	Hame tugs	Apr. 20, 1852	XVI.
8,713	White, Ammi	Bridges	Feb. 3, 1852	IX.
8,643	White, John L	Trucks for locomotives	Jan. 6, 1852	X.
9,256	White, Luther C	Lamp tops, rivets, &c., method of making	Sept. 7, 1852	V.
8,679	White, Robert	Blind, cast and wrought metal	Jan. 20, 1852	II.
9,206	Whitemarsh, Samuel	Caloriferes	Aug. 17, 1852	V.
8,793	Wickersham, John B	Iron fences	Mar. 9, 1852	II.
8,728	Wicks, Edward	Planters, seed	Feb. 10, 1852	I.
8,946	Wicks. Robert, and James Faulkner, jr	Mash tuns	May 11, 1852	IV.
8,897	Wilbar, Francis	Level, reflecting spirit, and square	Apr. 20, 1852	VIII.
9,495	Wilder, Aretus	Planing machines	July 17, 1852	XIV.
8,731	Willey, Calvin, jr., assignor to Calvin Willey, jr., and Urial Walker.	Excavating and dredging machines	Feb. 10, 1852	IX.
8,907	Willey, Calvin, jr., assignor to Andrew J. Brown, of Chicago, and Robert L. Dunlap, of Dunlap's Prairie, Illinois, executors of the estate of Calvin Willey, jr., deceased, and Urial Walker.	Gins for long staples of cotton	Apr. 27, 1852	III.
9,427	Williams, De Witt C	Whiffletree	Nov. 23, 1852	X.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,765	Williams, Orrillus T	Docks, floating	Feb. 24, 1852	IX.
8,766	Williams, Orrillus T	Vessels, apparatus for lightening	Feb. 24, 1852	VII.
9,607	Willoughby, James D	Curriers' beam and knife	Aug. 17, 1852	XVI.
9,062	Wilmot, S. R	Timepieces	June 22, 1852	VIII.
9,124	Winger, Jacob G	Presses, cotton	July 13, 1852	XII.
9,239	Winship, Ebenezer	Engines, steam, metallic stuffing box, packing in	Aug. 31, 1852	VI.
9,510	Winslow, J. F., and J. Snyder	Chairs, railroad, machinery for making	Dec. 28, 1852	IX.
9,395	Winslow, Seth E	Fans, automatic	Nov. 9, 1852	XVII.
9,437	Wise, Jacob and Freeman	Stone and earthen ware, manufacture of	Nov. 30, 1852	XV.
9,413	Wiswell, Daniel H	Car seats, railroad	Nov. 16, 1852	X.
9,355	Wolle, Francis	Bags of paper, machine for making	Oct. 26, 1852	XXII.
9,396	Wood, A. H	Burners, gas	Nov. 9, 1852	V.
8,947	Woodbury, Nathaniel	Butter from firkins, implements for cutting	May 11, 1852	XVII.
8,976	Woodcock, Dennison	Staves, machines for jointing	May 25, 1852	XIV.
9,042	Woodcock, Virgil	Ores, machine for stamping	June 15, 1852	II.
8,644	Woodruff, H. W	Wheels, cast-iron car	Jan. 6, 1852	X.
9,125	Woodward, Joshua	Planters, seed	July 13, 1852	I.
8,794	Woodward, Joshua	Plough	Mar. 9, 1852	I.
9,238	Woodworth, Arad, 3d, and Samuel Mower	Brick machines	Jan. 24, 1852	XV.
9,496	Woodworth, William H	Cloth on the beam, method of measuring	Dec. 21, 1852	III.
8,814	Woolson, Charles J	Stove doors, &c., hinges for	Mar. 16, 1852	V.
8,699	Worden, L. J., and E. H. Space	Burglar alarms	Jan. 27, 1852	XXII.
8,849	Wortendyke, C. A	Candle wicks	Mar. 30, 1852	IV.
9,458	Wright, W. W. and C. C	Harvesters, reels for	Dec. 7, 1852	I.
9,043	Wright, Wendell	Clutch, friction	June 15, 1852	XIII.
9,497	Yale, Linus, jr	Lock, safety	Dec. 21, 1852	II.
9,350	Yale, Linus, jr	Plates, burglar-proof, for doors, safe walls, vaults, &c	Oct. 19, 1852	II.
9,511	Yarnell, William	Daguerreotyping	Dec. 28, 1852	XVIII.
9,044	Yellott, George	Harness from horses, detaching	June 15, 1852	XVI.
8,833	Young, James	Oil, paraffine, making	Oct. 7, 1852	IV.

ALPHABETICAL LIST OF PERSONS WHOSE PATENTS FOR DESIGNS HAVE EXPIRED DURING THE YEAR 1866.

No.	Patentee.	Invention or discovery.	Date.
	Abbott & Lawrence. (*See* Gibbs, S. W., assignor.)		
	Abbott & Lawrence. (*See* Smith & Brown, assignors.)		
	Abbott, James G. (*See* Smith & Brown, assignors.)		
	Bachus, Evans. (*See* Gibbs, S. W., assignor.)		
1,104	Barry, Richard	Monuments, sepulchral	May 24, 1859.
1,089	Barstow, A. C	Stoves, cooks'	Mar. 22, 1859.
	Bartlett, Hayward & Co. (*See* Smith & Brown, assignors.)		
1,734	Bazin, James A	Solitaire board	Mar. 17, 1863.
1,086	Beckers, Alexander	Stereoscope cases	Mar. 1, 1859.
	Beesly, J., and Anthony J. Gallagher. (*See* Gallagher & Beesly.)		
1,749	Berlin, Henry C., and George H. Jones	Envelopes	Apr. 28, 1863.
1,081	Bissell, Hiram	Furnace, hot-air	Feb. 15, 1859.
1,100	Blanchard, George	Watch guards	May 10, 1859.
1,116	Bogle, James, assignor to self and Daniel Bogle	Cloth, floor oil	July 5, 1859.
1,117	Same	Cloth, floor oil	July 5, 1859.
1,134	Same	Cloth, floor oil	Aug. 23, 1859.
1,135	Same	Cloth, floor oil	Aug. 23, 1859.
1,172	Bragg, Oliver F., and Michael Burrowes	Trade mark	Dec. 20, 1859.
	Brown, Henry, and G. Smith. (*See* Smith & Brown.)		
	Brown, Thomas W. (*See* Reynold, Edward, assignor.)		
1,156	Brown, William Newton	Sewing machine, ornamenting	Oct. 25, 1859.
1,675	Burt, John W	Anklet	Dec. 9, 1862.
1,625	Same	Anklet, ornamental	Aug. 12, 1862.
	Chase, North & North. (*See* Smith & Brown, assignors.)		
	Chase, M. and H. M. (*See* Pittock, John and G. W., assignors.)		
1,705	Chamberlain, Addis E., assignor to Chamberlain & Co	Stove	Jan. 27, 1863.
1,111	Clark, P. J., assignor to S. S. Clark	Match boxes	June 28, 1859.
	Cox, Whitman & Cox. (*See* Smith & Brown, assignors.)		
1,151	Cridge, E. J	Stove box	Oct. 4, 1859.
1,078	Davids, Thaddeus	Ink bottles	Jan. 11, 1859.
1,131	Dezonche, Isaac	Stoves, parlor coal	Aug. 9, 1859.
1,653	Ellis, Salathiel	Medallion	Aug. 26, 1862.
1,105	Ellithorp, Solomon B	Sewing machines	Jan. 7, 1859.
1,149	Same	Sewing machine, frame of a	Sept. 27, 1859.
1,626	Evans, Thomas W	Trade mark	Aug. 12, 1862.
1,162	Foot, Charles T	Cloth cases	Nov. 1, 1859.
1,087	Foot, Henry C	Bells, table	Mar. 8, 1859.
1,695	Foyer, David, assignor to Abraham Folsom & Son	Floor cloths, &c., pattern	Dec. 16, 1862.
	Fuller, Warren & Co. (*See* Hathaway, David, assignor.)		
1,106	Gallagher, Anthony J., and J. Beesly, assignors to Anthony J. Gallagher	Stoves, cooks'	Jan. 7, 1859.
1,157	Gallagher, Anthony J	Stoves, cooks'	Oct. 25, 1859.
1,627	Gault, John	Case, postage stamp	Aug. 12, 1862.
1,107	Gibbs, S. W., assignor to Abbott & Lawrence	Stove plates	June 14, 1859.
1,108	Same	Stove plates	June 14, 1859.
1,109	Gibbs, S. W., assignor to Rathbone & Co	Stoves, sheet-iron, tops and bases of	June 14, 1859.

List of persons whose patents for designs have expired during the year 1866—Continued.

No.	Patentee.	Invention or discovery.	Date.
1,177	Gibbs, S. W., assignor to Evans Bachus	Stoves, parlor	Jan. 11, 1859.
1,143	Gilbert, Philo B	Spoons and forks, handles of	Sept. 6, 1859.
1,737	Green, George, assignor to Deborat Powers, Albert E. Powers, and Nathaniel Powers	Oil-cloth, floor	Mar. 17, 1863.
1,112	Greer, James, and Rufus J. King	Stove, cooking	July 5, 1859.
1,113	Same	Stoves, sides and doors of cooking	July 5, 1859.
1,168	Grosh, Harrison	Carriage bodies	Nov. 15, 1859.
1,128	Ham, Roberts, assignor to Smith, Sheldon & Co	Stoves, parlor	Aug. 9, 1859.
1,750	Hadden, John L	Kettles or stoves, covers for	Apr. 28, 1863.
1,163	Hardgrove, Thomas and Samuel	Trade mark	Nov. 7, 1859.
1,158	Harris, C., and Paul W. Zoiner	Stoves, parlor	Oct. 25, 1859.
1,075	Harris, C., and Paul W. Zoiner, assignors to Harris, Zoiner & Co	Stoves, parlor	Jan. 4, 1859.
1,076	Same	Stoves, cooks'	Jan. 4, 1859.
	Hartford Manufacturing Company. (*See* Thompson, Henry G., assignor.)		
1,102	Hathaway, David, assignor to Fuller, Warren & Co	Stove plates	May 17, 1859.
1,125	Same	Stove, cooks'	July 26, 1859.
1,088	Same	Stove, parlor cooks'	Mar. 22, 1859.
	Hayward, Bartlett & Co. (*See* Smith & Brown, assignors.)		
1,114	Hebbard, Henry	Spoon and fork handles	July 5, 1859.
1,136	Same	Spoon or fork handles	Aug. 26, 1859.
1,145	Same	Spoons, forks, &c., handles	Sept. 13, 1859.
1,615	Holmes, Silas A	Back-ground, photographic	Aug. 5, 1862.
1,616	Hutchinson, James, assignor to Jonathan Whipple	Floor-cloth pattern	Jan. 18, 1859.
1,079	Hyde, James R	Stove, cooking	Jan. 18, 1859.
1,095	Jerrott, Sherman S., and Francis H. Root	Stove, cooks'	Apr. 26, 1859.
1,099	Same	Stoves	May 3, 1859.
1,150	Johnson, B. M	Gas cocks, &c	Sept. 27, 1859.
1,751	Kaufman, Ernest	Ice pitcher	Apr. 28, 1863.
1,154	Kimberly, Roswell	Clock case	Oct. 4, 1859.
	King, Rufus J., and James Greer. (*See* Greer & King.)		
1,101	Lane, J. W	Stove plates	May 10 1859.
	Lawrence & Abbott. (*See* Gibbs, S. W., assignor.)		
	Lawrence & Abbott. (*See* Smith & Brown, assignors.)		
1,164	Leanard, Allen	Casters, base for	Nov. 7, 1859.
1,165	Same	Caster handles	Nov. 7, 1859.
1,098	Lewis, William H	Spoon and fork handles	May 3, 1859.
1,166	Same	Spoon and fork handles	Nov. 7, 1859.
1,173	Lincoln, Thomas and Samuel	Trade mark for soap boxes	Dec. 20, 1859.
	Lowell Manufacturing Company. (*See* Noy, Elemir J., assignor.)		
1,085	Lloyd, William	Stereoscope cases	Feb. 22, 1859.
1,147	Martino, John, assignor to D. Stuart and Richard Peterson	Stove, cooks'	Sept. 20, 1859.
1,148	Martino, John, and James Horton, assignors to D. Stuart and Richard Peterson	Stoves, cylinder	Sept. 20, 1859.
1,110	McCurdy, James S., assignor to John M. Myers	Sewing machines, arms of	June 14, 1859.
1,152	Same	Sewing machines, arms of	Oct. 4, 1859.
1,155	McLean, James H	Trade mark	Oct. 11, 1859.
1,097	McMurtry, John, assignor to George C. McMurtry	Burial case	May 3, 1859.

1,159	Meyer, Jeremiah, assignor to Alden Sampsen	Cloths, floor	Oct. 25, 1859.
1,174	Same	Cloths, floor, oil, carpets, &c.	Dec. 20, 1859.
1,651	Mix, G. J	Shanks, spoon	Aug. 19, 1862.
1,124	Munn, Joseph A	Clock cases	July 26, 1859.
1,146	Murdock, Eliza A	Caps for ladies, skating or riding	Sept. 20, 1859.
1,082	Musgrove, Hiram B	Gas burners	Feb. 15, 1859.
	Myers, John M. (*See* McCurdy, James S., assignor.)		
1,083	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Carpets	Feb. 15, 1859.
1,084	Same	Carpets	Feb. 15, 1859.
1,120	Same	Carpet pattern	July 5, 1859.
1,121	Same	Carpet pattern	July 5, 1859.
1,122	Same	Carpet pattern	July 5, 1859.
1,123	Same	Carpet pattern	July 5, 1859.
1,128	Same	Carpet pattern	Aug. 9, 1859.
1,130	Same	Carpet pattern	Aug. 9, 1859.
1,144	Same	Carpet pattern	Sept. 6, 1859.
1,169	Same	Carpet pattern	Nov. 22, 1859.
1,170	Same	Carpet pattern	Nov. 22, 1859.
1,175	Same	Carpets, &c.	Dec. 20, 1859.
1,176	Same	Carpets, &c.	Dec. 20, 1859.
1,618	Same	Carpet pattern	Aug. 5, 1862.
1,619	Same	Carpet pattern	Aug. 5, 1862.
1,630	Same	Carpet pattern	Aug. 12, 1862.
1,631	Same	Carpet pattern	Aug. 12, 1862.
1,632	Same	Carpet pattern	Aug. 12, 1862.
1,633	Same	Carpet pattern	Aug. 12, 1862.
1,634	Same	Carpet pattern	Aug. 12, 1862.
1,635	Same	Carpet pattern	Aug. 12, 1862.
1,636	Same	Carpet pattern	Aug. 12, 1862.
1,637	Same	Carpet pattern	Aug. 12, 1862.
1,638	Same	Carpet pattern	Aug. 12, 1862.
1,639	Same	Carpet pattern	Aug. 12, 1862.
1,640	Same	Carpet pattern	Aug. 12, 1862.
1,641	Same	Carpet pattern	Aug. 12, 1862.
1,642	Same	Carpet pattern	Aug. 12, 1862.
1,643	Same	Carpet pattern	Aug. 12, 1862.
1,644	Same	Carpet pattern	Aug. 12, 1862.
1,645	Same	Carpet pattern	Aug. 12, 1862.
1,646	Same	Carpet pattern	Aug. 12, 1862.
1,647	Same	Carpet pattern	Aug. 12, 1862.
1,648	Same	Carpet pattern	Aug. 12, 1862.
1,649	Same	Carpet pattern	Aug. 12, 1862.
1,650	Same	Carpet pattern	Nov. 11, 1862.
1,666	Same	Carpet pattern	Nov. 11, 1862.
1,667	Same	Carpet pattern	Nov. 11, 1862.
1,668	Same	Carpet pattern	Nov. 11, 1862.
1,669	Same	Carpet pattern	Nov. 11, 1862.
1,670	Same	Carpet pattern	Nov. 11, 1862.
1,671	Same	Carpet pattern	Nov. 11, 1862.
1,672	Same	Carpet pattern	Nov. 11, 1862.
1,673	Same	Carpet pattern	Dec. 16, 1862.
1,698	Same		

List of persons whose patents for designs have expired during the year 1866—Continued.

No.	Patentee.	Invention or discovery.	Date.
1,699	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Carpet pattern	Dec. 16, 1862.
1,700	Same	Carpet pattern	Dec. 16, 1862.
1,722	Same	Carpet pattern	Mar. 3, 1863.
1,723	Same	Carpet pattern	Mar. 3, 1863.
1,724	Same	Carpet pattern	Mar. 3, 1863.
1,725	Same	Carpet pattern	Mar. 3, 1863.
1,726	Same	Carpet pattern	Mar. 3, 1863.
1,727	Same	Carpet pattern	Mar. 3, 1863.
1,728	Same	Carpet pattern	Mar. 3, 1863.
1,729	Same	Carpet pattern	Mar. 3, 1863.
1,730	Same	Carpet pattern	Mar. 3, 1863.
1,754	Same	Carpet pattern	Apr. 28, 1863.
1,755	Same	Carpet pattern	Apr. 28, 1863.
1,756	Same	Carpet pattern	Apr. 28, 1863.
1,765	Same	Carpet pattern	June 16, 1863.
1,766	Same	Carpet pattern	June 16, 1863.
1,767	Same	Carpet pattern	June 16, 1863.
1,768	Same	Carpet pattern	June 16, 1863.
1,769	Same	Carpet pattern	June 16, 1863.
1,770	Same	Carpet pattern	June 16, 1863.
1,771	Same	Carpet pattern	June 16, 1863.
1,772	Same	Carpet pattern	June 16, 1863.
1,773	Same	Carpet pattern	June 16, 1863.
1,774	Same	Carpet pattern	June 16, 1863.
	North, Chaso & North. (*See* Smith & Brown, assignors.)		
1,091	Patterson, James	Cloth, floor	Apr. 4, 1859.
1,739	Patterson, James, assignor to Deborat Powers, Albert E. Powers, and Nathaniel Powers	Oil-cloth, floor	Mar. 17, 1863.
1,652	Phineas, Myer	Inkstand	Aug. 19, 1862.
1,126	Pittock, G. W., and John, assignors to M. and H. M. Chase	Stoves, cooks'	July 26, 1859.
1,092	Ransom, Samuel H	Stove, plate for a	Apr. 5, 1859.
1,093	Same	Stove, plates of a cooks'	Apr. 5, 1859.
1,757	Richards, Egbert S	Chain, links of a	May 5, 1863.
1,761	Same	Ornamental chain, links of	May 19, 1863.
1,758	Same	Breastpin and eardrops	May 5, 1863.
1,090	Reynolds, Edward, assignor to Thomas W. Brown	Racks, hat	Mar. 29, 1859.
1,080	Richardson, Apollo	Stoves	Feb. 7, 1859.
1,620	Roberts, William W	Burial case	Aug. 5, 1862.
	Roberts, John E., *et al.* (*See* Wood, Roberts & Hubbell.)		
	Root, Francis H., and S. S. Jewett. (*See* Jewett & Root.)		
	Ross, Thomas, and T. M. Strong. (*See* Strong & Ross.)		
1,132	Russell, Nathaniel E	Forks, table	Aug. 9, 1859.
	Sampson, Alden. (*See* Meyer, Jeremiah, assignor.)		
1,742	Safford, Joseph A	Stand, eyelet-machine	Mar. 24, 1863.
1,743	Sailor, Samuel	Picture frame	Mar. 24, 1863.
1,762	Smead, M. Austino	Brooch	May 26, 1863.

1,096	Smith, George W.	Teapot, &c	Apr. 26, 1859.
1,093½	Smith, Garrettson, and Henry Brown, assignors to Hayward, Bartlett & Co	Stoves, air-tight	Apr. 12, 1859.
1,094	Smith, Garrettson, and Henry Brown, assignors to North, Chase & North	Stoves	Apr. 18, 1859.
1,118	Smith, Garrettson, and Henry Brown, assignors to J. G. Abbott & A. Lawrence	Stoves	July 5, 1859.
1,113	Smith, Garrettson, and Henry Brown, assignors to Cox, Whitman & Cox	Stoves	Aug. 16, 1859.
1,153	Smith, Garrettson, and Henry Brown, assignors to Hayward, Bartlett & Co.	Stoves	Oct. 4, 1859.
1,167	Smith, Garrettson, and Henry Brown, assignors to Cox, Whitman & Cox	Stoves	Nov. 1, 1859.
1,197	Smith, Garrettson, and Henry Brown, assignors to J. G. Abbott	Stoves, parlor	Dec. 20, 1859.
1,119	Stevens, William W., assignor to Nathaniel P. Richardson & Co	Fire frames	July 5, 1859.
1,127	Same	Stoves, parlor cooking	July 26, 1859.
1,137	Strong, Thomas M., and Thomas Ross	Scales	Aug. 23, 1859.
	Stuart, D., and R. Peterson. (*See* Martino & Norton, assignors.)		
1,139	Thompson, Henry G., assignor to Hartford Carpet Company	Carpet pattern	Aug. 30, 1859.
1,140	Same	Carpet pattern	Aug. 30, 1859.
1,141	Same	Carpet pattern	Aug. 30, 1859.
1,142	Same	Carpet pattern, three-ply	Aug. 30, 1859.
1,178	Same	Carpet pattern	Dec. 20, 1859.
1,179	Same	Carpet pattern	Dec. 20, 1859.
1,180	Same	Carpet pattern	Dec. 20, 1859.
1,181	Same	Carpet pattern	Dec. 20, 1859.
1,182	Same	Carpet pattern	Dec. 20, 1859.
1,683	Same	Carpet pattern	Dec. 9, 1862.
1,684	Same	Carpet pattern	Dec. 9, 1862.
1,685	Same	Carpet pattern	Dec. 9, 1862.
1,686	Same	Carpet pattern	Dec. 9, 1862.
1,687	Same	Carpet pattern	Dec. 9, 1862.
1,688	Same	Carpet pattern	Dec. 9, 1862.
1,689	Same	Carpet pattern	Dec. 9, 1862.
1,690	Same	Carpet pattern	Dec. 9, 1862.
1,691	Same	Carpet pattern	Dec. 9, 1862.
1,692	Same	Carpet pattern	Dec. 9, 1862.
1,693	Same	Carpet pattern	Dec. 9, 1862.
1,694	Same	Carpet pattern	Dec. 9, 1863.
1,707	Same	Carpet pattern	Jan. 27, 1863.
1,708	Same	Carpet pattern	Jan. 27, 1863.
1,709	Same	Carpet pattern	Jan. 27, 1863.
1,710	Same	Carpet pattern	Jan. 27, 1863.
1,711	Same	Carpet pattern	Jan. 27, 1863.
1,712	Same	Carpet pattern	Jan. 27, 1863.
1,713	Same	Carpet pattern	Jan. 27, 1863.
1,714	Same	Carpet pattern	Jan. 27, 1863.
1,715	Same	Carpet pattern	Jan. 27, 1863.
1,716	Same	Carpet pattern	Jan. 27, 1863.
1,717	Same	Carpet pattern	Jan. 27, 1863.
1,718	Same	Carpet pattern	Jan. 27, 1863.
1,777	Same	Carpet pattern	June 16, 1863.
1,778	Same	Carpet pattern	June 16, 1863.
1,779	Same	Carpet pattern	June 16, 1863.
1,780	Same	Carpet pattern	June 16, 1863.
1,781	Same	Carpet pattern	June 16, 1863.
1,782	Same	Carpet pattern	June 16, 1863.
1,783	Same	Carpet pattern	June 16, 1863.

List of persons whose patents for designs have expired during the year 1866—Continued.

No.	Patentee.	Invention or discovery.	Date.
1,784	Thompson, Henry G., assignor to Hartford Carpet Company	Carpet pattern	June 16, 1863.
1,785	Same	Carpet pattern	June 16, 1863.
1,786	Same	Carpet pattern	June 16, 1863.
1,787	Same	Carpet pattern	June 16, 1863.
1,788	Same	Carpet pattern	June 16, 1863.
1,611	Taylor, George, and James Lusty	Shoes	July 1, 1862.
1,663	Townsend, Mathew	Shawls, borders of	Oct. 14, 1862.
1,138	Violet, Jean Baptiste, assignor to J. W. Hoyt	Cloth, floor oil	Aug. 30, 1859.
1,171	Same	Cloth, floor oil	Nov. 30, 1859.
	Warren, Fuller & Co. (*See* Hathaway, David, assignor.)		
1,701	Warburton, William F.	Military hat	Dec. 16, 1862.
	Whitman, Cox & Cox. (*See* Smith & Brown, assignors.)		
1,115	Wilson, William W.	Sun dial	July 5, 1859.
1,161	Wishart, L. Q. C.	Bottles, ornamenting	Oct. 25, 1859.
	Zoiner, Paul W. (*See* Harris & Zoinor.)		

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,784	Abbe, H. H.	East Hampton, Conn	Bell, call	Jan. 3, 1866.
54,658	Abbe, John Randolph	Providence, R. I.	Bed bottom. (Antedated May 7, 1866)	May 15, 1866.
	Abbott & Noble. (*See* Gibbs, Samuel W., assignor.) Design.			
	Same.			
	Abbott & Noble. (*See* Smith & Brown, assignors.) Design.			
	Same.			
	Same.			
	Same.			
	Same.			
55,973	Abbott, Charles E	Boston, Mass	Lamps, extinguisher for	July 3, 1866.
59,534	Same	Malden, Mass	Lamp extinguishers	Nov. 13, 1866.
55,446	Abbott, David S	Ischua, N. Y	Flax-dressing machine	June 12, 1866.
58,194	Abbott, Estes	Chagrin Falls, Ohio	Cans, milk	Sept. 25, 1866.
2,244	Abbott, James G., assignor to Abbott & Noble	Philadelphia, Pa	Stove, plates of a. (Antedated December 27, 1865.) Design	Jan. 30, 1866.
52,255	Abbott, Joseph	Washington, Ind	Vehicles, metallic hub for	Jan. 30, 1866.
55,595	Abbott, J. P	Cleveland, Ohio	Eave trough	June 19, 1866.
54,836	Abbott, M. E	Summit Hill, Pa	Wells, drilling machine for	May 22, 1866.
	Abbott, T. R. (*See* Taber, Wing H., assignor.) Reissue.			
59,888	Abel, Frederick Augustus	Great Britain	Gun cotton, manufacture of	Nov. 20, 1866.
57,450	Abord, Maurice	France	Ceilings, brick for	Aug. 21, 1866.
54,996	Aborn, James, assignor to Henry H. Giles	Providence, R. I.	Fastener and operator, blind	May 22, 1866.
	Abrams, S. (*See* Gray, Richard H., assignor.)			
52,120	Absterdam, John	New York, N. Y.	Ores, process for desulphurizing	Jan. 23, 1866.
52,121	Same	do	Iron and steel, process for refining	Jan. 23, 1866.
58,362	Same	do	Engines, steam, condensers for	Oct. 2, 1866.
58,964	Same	do	Screws	Oct. 23, 1866.
59,805	Achard, François Ferdinand Auguste	France	Car brakes, electro-magnetic	Nov. 20, 1866.
52,809	Acker, A. S	Albion, N. Y	Harvesters	Feb. 27, 1866.
57,061	Same	do	Pitman box	Aug. 14, 1866.
60,608	Acker, C. W	Watertown, N. Y.	Eyelet, carriage curtain	Dec. 18, 1866.
58,566	Ackerman, P. M.	Webster, N. Y.	Gates	Oct. 9, 1866.
58,187	Ackland, Fred'k T., Henry G. Mitchell, and Mustapha Mustapha.	Egypt	Gins, cotton	Sept. 18, 1866.
53,765	Ackley, John T., and John H. Truax	Philadelphia, Pa	Cans, manufacture of	Apr. 10, 1866.
58,363	Adair, James	Pittsburg, Pa	Pen rack, spring	Oct. 2, 1866.
56,343	Adair, James, and H. W. C. Tweddle	do	Evaporating and distilling liquids	July 17, 1866.
53,252	Adam, Frederick E.	Baltimore, Md	Stoves	Mar. 20, 1866.
57,454	Adams, Albert	Springfield, Mass	Mash tuns, method of preventing coating of pipes used in	Aug. 28, 1866.
2,205	Adams, Augustus	Sandwich, Ill	Corn shellers (Reissue)	Mar. 20, 1866.
54,659	Same	do	Corn shellers	May 15, 1866.
	Adams, A. P., and H. A. Rains. (*See* Rains & Adams.)			
52,509	Adams, Charles	Philadelphia, Pa	Bleaching oil, paraffine, wax, &c., apparatus for	Feb. 13, 1866.
58,040	Adams, David E.	Allegheny, Pa	Bolts, making	Sept. 18, 1866.
59,335	Adams, E. A	Boston, Mass	Sifter, mixer and kneader, flour	Nov. 6, 1866.
	Adams, Eliza A., admin'x, &c. (*See* Thomas & Everett.) Extension.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Adams, George F. (*See* Willard, Horatio, assignor.)			
58,965	Adams, Henry	Seattle, W. T	Gates	Oct. 23, 1866.
	Adams, H. B., and A. H. Hook. (*See* Hook & Adams.)			
57,271	Adams, Isaac, jr	Boston, Mass	Metals with metals, coating	Aug. 21, 1866.
54,660	Adams, I. J. W	Galestown, Md	Water-wheels	May 15, 1866.
51,785	Adams, John	Pittsburg, Pa	Jars, preserve, sealing bung for	Jan. 2, 1866.
55,799	Adams, John	Kokomo, Ind	Boots, mode of cutting	June 26, 1866.
60,112	Adams, Joseph	Fair Haven, Vt	Railroad rails	Dec. 4, 1866.
52,108	Adams, Joseph, assignor to self and Nathaniel Dearborn	Janesville, Wis	Washing machine	Jan. 16, 1866.
54,272	Adams, J. P	Whitney's Point, N. Y	Butter worker	May 1, 1866.
59,535	Adams, Nathan	Altoona, Pa	Spikes, machines for drawing	Nov. 13, 1866.
58,966	Adams, Sherman W	Wetherfield, Conn	Hoes	Oct. 23, 1866.
54,810	Adams, Richard S., assignor to self and George E. Parrott	Loyd, N. Y	Bales, compressed, machines for tightening and securing the hoops of.	May 15, 1866.
58,364	Adams, Robert	Cincinnati, Ohio	Lacing, slide, and shoe fastener	Oct. 2, 1866.
52,510	Adams, Sherman W	Wethersfield, Conn	Hoes	Feb. 13, 1866.
57,838	Adams, William G	Boston, Mass	Hulling rice, &c	Sept. 11, 1866.
52,122	Adelsberger, Daniel G	Emmettsburg, Md	Rakes, horse	Jan. 23, 1866.
58,041	Adkins, Homer	Plymouth, Ill	Car coupling	Sept. 18, 1866.
56,687	Adler, A	France	Hides, apparatus for working	July 31, 1866.
	Adrianee, John P. (*See* Brown, Thomas S., assignor.) Same.			
54,837	Adt, John	Wolcottville, Conn	Riveting machines	May 22, 1866.
54,640	Adt, John, assignor to Elisha Turner	do	Corkscrew	May 8, 1866.
2,419	Aiken, J. B. and W., assignors through mesne assignments to Jonas B. Aiken.	Franklin, N. H	Knitting machines (Reissue)	Dec. 18, 1866.
59,308	Aiken, John H., assignor to self and Reuben Rowley	Norwalk, Conn	Carding engines, machines for oiling wool for	Oct. 30, 1866.
57,455	Aiken, Walter	Franklin, N. H	Ironing hosiery, machines for	Aug. 28, 1866.
59,740	Ainsworth, Perley	Cape Vincent, N. Y	Wells, drills for	Nov. 20, 1866.
52,511	Aikens, William H	Dryden, N. Y	Engines, steam, plug valves for	Feb. 13, 1866.
60,609	Albee, H. M	Webster, Mass	Ellipsographs	Dec. 18, 1866.
57,272	Albee, Levi W., and Simeon W	South Charlestown, N. H	Beehives	Aug. 21, 1866.
54,479	Albert C. and J. J. Shank	Harrisville, Ohio / West Salem, Ohio	Sheep-holder for shearing	May 8, 1866.
58,195	Albert, Jacob	Baltimore, Md	Traces, combined button and loop for	Sept. 25, 1866.
2,386	Albertson, Albert, assignor to John Matthews	New York, N. Y	Bottle stoppers (Reissue)	Oct. 30, 1866.
59,789	Albertson, Samuel, dec'd, by Stephen Albertson, administrator	do	Fireplaces, adjustable dampers for	Nov. 20, 1866.
	Albertson, O., and A. Ellis. (*See* Ellis & Albertson.)			
59,937	Albright, George H., and William R. Burns	Lancaster, Pa	Bridles	Nov. 27, 1866.
57,656	Alden, Albert	New York, N. Y	Brushes, handle for	Sept. 4, 1866.
59,156	Alden, Charles	Newburg, N. Y	Fires, mode of extinguishing	Oct. 30, 1866.
59,938	Alden, David A	Roxbury, Mass	Collars and cuffs, paper, and the manufacture thereof	Nov. 27, 1866
52,254	Alden, H. W., and W. Mackay	New York, N. Y	Types, printing, machine for setting and distributing	Jan. 23, 1866.
56,845	Alden, Leonard B, assignor to John Walker	Cincinnati, Ohio	Egg-beater	July 31, 1866.
52,123	Alden, Loyal W	Fosterville, N. Y	Plough clevis	Jan. 23, 1866.

52,010	Aldrich, John	Lake Village, N. H	Aqueduct coupling	Jan. 16, 1866.
56,688	Alexander, Ambrose	Middleville, Mich	Washing machine	July 31, 1866.
58,365	Alexander, Charles L.	Washington, D. C	Paper fastener	Oct. 2, 1866.
52,512	Alexander, John	Brooklyn, N. Y.	Iron, flat	Feb, 13, 1866.
	Alexander, J. W., and E. A. *et al.* (*See* Edgell & Alexander.)			
54,480	Alexander, Louis	New York, N. Y	Water-closet seats	May 8, 1866.
52,635	Alexander, Thomas K., deceased, by James H. Alexander, administrator.	Decatur, Ill	Planter, seed	Feb. 13, 1866.
	Alexander, W. H. (*See* Kailey, John, assignor.)			
60,319	Alexander, W. J	Manchester, Iowa	Hame fastening	Dec. 11, 1866.
	Alford, William, and John D. Spear	Philadelphia, Pa	Safes, iron (Extension)	May 16, 1866.
56,689	Algeo, R. J	Kalamazoo, Mich	Buckle, trace	July 31, 1866.
	Alger, Charles C. (*See* Geiger, Leonard, assignor.) Reissue.			
54,997	Alger, George A., assignor to self and Waldo Whitney	Manchester, N. H	Punching machine	May 22, 1866.
54,811	Ali, Mati, assignor to self and William Mayer	Philadelphia, Pa	Cigars for tying, clamp for holding	May 15, 1866.
57,616	Allamby, George T	Bangor, Maine	Bolts, door	Aug. 28, 1866.
59,939	Allan Charles E	Boston, Mass	Faucets	Nov. 27, 1866.
58,933	Allard, Isaac, assignor to self and R. G. Turner	Belfast, Maine	Sawing machine, wood	Oct. 16, 1866.
57,839	Allard, William H., and Robert W. Thomas	Portage, Wisconsin	Gates, flood, self-operating	Sept. 11, 1866.
55,034	Allardice, Charles	Norwalk, Ohio	Knitting machine burrs, self-lubricating	May 29, 1866.
2,313	Allen, Albert J., assignor to Ralph Allen	Rock Stream, N. Y	Steam gauges (Reissue)	July 17, 1866.
55,447	Allen, Boyd, and John Riddell	Boston, Mass	Gas-stand, portable	June 12, 1866.
	Same. (*See* Riddell & Allen.)			
54,085	Allen, C. F.	Aurora, Ill	Car truck	Apr. 24, 1866.
	Allen, C. H. (*See* Lyle, John, assignor.)			
	Allen, Cotton H. (*See* Lyle, John, assignor.)			
	Allen, D. D	Adams, Mass	Boot soles, tool for cutting pegs out for (Extension)	Oct. 11, 1866.
54,086	Allen, E. G	Boston, Mass	Railway frog	Apr. 24, 1866.
58,196	Same	do	Railway frog	Oct. 2, 1866.
2,405	Same	do	Railway frog (Reissue)	Dec. 4, 1866.
54,657	Allen, Edward L	Fairhaven, Vt	Petroleum, &c., vessel for	May 8, 1866.
57,617	Allen, Edwin	Norwalk, Conn	Envelopes, machines for making	Aug. 28, 1866.
55,596	Allen, Ethan	Worcester, Mass	Gun barrels, heating and soldering	June 19, 1866.
58,567	Allen, F. S	New York, N. Y	Gunpowder, manufacture of	Oct. 9, 1866.
54,087	Allen, George P	Woodbury, Conn	Hoe, weeding	Apr. 24, 1866.
2,237	Allen, Horatio	New York, N. Y	Condensers, packing for tube of (Reissue)	May 8, 1866.
55,448	Same	do	Cars, railroad, seats and couches for	June 12, 1866.
52,657	Allen, Isaac E	Windham, Maine	Boots and shoes, head block for	Feb. 20, 1866.
	Allen, Isaac L. (*See* Richer, Leon T., assignor.)			
	Allen, John, *et al.* (*See* Frey, Allen, and Smith.)			
	Allen, John E., *et al.* (*See* Rucker, Allen, and Smith.)			
52,810	Allen, John F	New York, N. Y	Punching, apparatus for	Feb. 27, 1866.
54,481	Same	do	Propeller	May 8, 1866.
53,389	Allen, John W	Newark, N. J	Hinges	Mar. 27, 1866.
53,766	Allen, Levi O	Gardiner, Maine	Churns	Apr. 10, 1866.
51,999	Allen, Marinus N., Joseph Rouse, and James Melcher	Titusville, Pa. / Waterbury, Conn	Pump pistons, packing	Jan. 9, 1866.
60,113	Allen, Richard	Jersey City, N. J	Lathe clutches	Dec. 4, 1866.
52,948	Allen, Richard L	New York, N. Y	Ploughs	Mar. 6, 1866.
57,840	Allen, R. N.	Cleveland, Ohio	Pumps, deep wells, pistons for	Sept. 11, 1866.
59,806	Same	do	Drying fruit, &c	Nov. 20, 1866.
52,355	Allen, R. N., assignor to W. R. Mould	do	Wells, deep, wooden piston rods for	Jan. 30, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,253	Allen, R. N., and C. C. Hinsdale	Cleveland, Ohio	Iron, sheet, manufacture of	Mar. 20, 1866.
57,657	Allen, Samuel F	Chicago, Ill	Axle box	Sept. 4, 1866.
53,094	Allen, Stephen M	Woburn, Mass	Paper, water-proof, manufacture of	Mar. 13, 1866.
53,095	Same	do	Belting for machinery	Mar. 13, 1866.
	Allen, William H., *et al.* (*See* Mardon, Samuel, assignor.)			
59,336	Allenderff, William	Philadelphia, Pa	Liquors, malt, apparatus for cooling	Nov. 6, 1866.
52,124	Allerton, Reuben G	New York, N. Y	Fabric, water-proof (Reissue)	Jan. 23, 1866.
2,248	Same	do	Fabric, water-proof	May 22, 1866.
59,940	Alleyne, John Gay Newton, assignor to Zoheth Sherman Durfee	Great Britain	Forging apparatus	Nov. 27, 1866.
54,482	Allison, Asa H	Charlottesville, Ind	Scrubber and tender	May 8, 1866.
58,568	Allison, Robert	Port Carbon, Pa	Boring machines	Oct. 9, 1866.
58,746	Allison, W. C	Philadelphia, Pa	Petroleum, tanks for containing and transporting	Oct. 16, 1865.
52,372	Allman, Herbert	England	Locks	Jan. 30, 1866.
60,457	Allums, James S	Cusseta, Ga	Presses, cotton and hay	Dec. 18, 1866.
2,314	Allyn T. F	Canandaigua, N. Y	Car spring (Reissue)	July 17, 1866.
57,456	Alsop, Charles H	Middletown, Conn	Hook, snap	Aug. 28, 1866.
58,967	Altfather, William T	Johnstown, Pa	Feed-cutter	Oct. 23, 1866.
59,337	Same	do	Car-truck standards	Nov. 6, 1866.
56,871	Althouse, M. J	Waupun, Wis	Pumps	Aug. 7, 1866.
59,536	Same	do	Pumps	Nov. 13, 1866.
59,537	Althouse, M. J., and P. Reifsnider	do	Carriages, device for attaching thills to	Nov. 13, 1866.
58,042	Altick, James O	Dayton, Ohio	Valves, steam, globe	Sept. 18, 1866.
	Same. (*See* Crutchfield, W. G., assignor.)			
56,509	Altick, William	Dayton, Ohio	Stalks, old cotton and corn, machine for pulling up	July 24, 1866.
	Altmeyer, F., and Melvin Jincks. (*See* Jincks & Altmeyer.)			
	Alverson, C. F., and L. C. Bristol. (*See* Bristol & Alverson.)			
57,457	Alvord, Clark	Westford, Wis	Collars, horse	Aug. 29, 1866.
	Alvord, Clark, *et al.* (*See* Holford, E. R., assignor.)			
53,767	Alvord, E. S	Milford, Del	Wells, constructing	Apr. 10, 1866.
56,870	Alvord, H. J	Detroit, Mich	Disinfecting commode	July 31, 1866.
	Ambler, A. J. (*See* Jauriet, Charles F., assignor.)			
	Same. (*See* Jauriet, Charles F., assignor.)			
53,552	Ambler, S. F	Tuolumne county, Cal	Quartz crushers	Apr. 3, 1866.
56,690	Amelung, H. A	New York, N. Y	House, smoke and drying	July 31, 1866.
	American Bolt and Rivet Company. (*See* Kirkup, Lancelot, ass'r.)			
	American Building Block Company. (*See* Greacen, Foster & Cooper, assignors.)			
	American Eyelet Company. (*See* Richards, Jesse F., assignor.)			
	American Eyelet Company. (*See* Marsh, Edwin E., assignor.)			
	American Flash and Cap Company. (*See* Fowler & French, assignors.)			
	American Improved Gas Retort Company. (*See* Millochan, Adolph, assignor.)			
	American Lead-Pencil Company. (*See* Schedler, Joseph, assignor.) Design.			

	American Lead Pencil Company. (*See* Schedler, Joseph, assignor.) Design.			
	American Magnesium Company. (*See* Wing, Charles H., assignor.)			
	American Metal Company. (*See* Savage, Elliot, assignor.) Reissue.)			
	American Nail Machine Company. (*See* Hunt, C. D., assignor.)			
	American Press and Clasp Company. (*See* De Forest, Thomas B., assignor.)			
	American Retort Company. (*See* Millochan, Adolph, assignor.)			
	American Saw Company. (*See* Emerson, J. E., assignor.) Same.			
	American Screw Company. (*See* Sloan, Thomas J., assignor.) Reissue.			
	American Tool and Machine Company. (*See* Sewell, George, assignor.)			
	American Tree Protector Company. (*See* Merritt, Benjamin, jr., assignor.)			
	American Water-proof Cloth Company. (*See* Crossley, Thomas, assignor.)			
	Ames, J. P., *et al.* (*See* Wiley, Moses H., assignor.)			
53,390	Ames, Martin	New Ipswich, N. H.	Bottles, ink, stopper for	Mar. 27, 1866.
2,255	Ames, Sarah F	Boston, Mass	Lincoln, Abraham, bust of (Design)	Jan. 30, 1866.
54,273	Ammidown, C	Southbridge, Mass	Spectacle-bows, joints of	May 1, 1866.
60,114	Ammidown, M. M	Boston, Mass	Drilling machines	Dec. 4, 1866.
55,449	Anders, John S	North Wales, Pa	Medicine	June 12, 1866.
58,188	Anderson, Alexander	London, Canada West	Cultivators	Sept. 18, 1866.
54,661	Anderson, A. L	Ware, Mass	Looms, harness, motion for	May 15, 1866.
56,157	Anderson, Andrew P., and Byron Edwards	Princeton, Ill	Cultivators	July 10, 1866.
58,747	Anderson, George S	Jeffersonville, Ind	Willow, machine for peeling	Oct. 16, 1866.
58,934	Anderson, Horatio, assignor to self and George W. Cushing	Chicago, Ill	Steam generator safety valves	Oct. 16, 1866.
52,811	Anderson, John	Waukesha, Wis	Fence-posts, device for driving	Feb. 27, 1866.
	Anderson, Joseph, *et al.* (*See* Bogardus, John F., assignor.)			
	Anderson, J., *et al.* (*See* Bogardus, John F., assignor.)			
55,947	Anderson, Robert, assignor to S. O. Ryder	Brooklyn, N. Y	Hulling coffee, machines for	June 26, 1866.
	Anderson, William P., and John Hull. (*See* Hull & Anderson.)			
57,273	Andres, S. R	Troy, N. Y	Eraser and burnisher	Aug. 21, 1866.
	Andresen, Hans H., and Enoch K. Thomas. (*See* Thomas & Andresen.)			
	Andrews, Edward, and John H. Carr. (*See* Carr & Andrews.)			
55,219	Andrews, Elijah A	New Britain, Conn	Hook, snap	June 5, 1866.
58,569	Andrews, Emanuel	Williamsport, Pa	Saws, cross-cut, to their handles, mode of securing	Oct. 9, 1866.
2,290	Same	do	Saws, machines for grinding (Reissue)	June 19, 1866.
58,366	Andrews, Jacob F	New Providence, Pa	Sewing machines	Oct. 2, 1866.
58,710	Andrews, J. K., assignor to self and J. C. Tilton	Antrim, Ohio	Car, railway windows	Oct. 9, 1866.
59,704	Andrews, J. K., assignor to Joseph C. Tilton	do	Lamp-burners	Nov. 13, 1866.
60,458	Andrews, Leonard and Ira	Biddeford, Maine	Forging apparatus, blacksmiths'	Dec. 18, 1866.
54,483	Andrews, R. H	Elizabethtown, Pa	Pumps	May 8, 1864.
58,197	Andrews, Samuel	Cleveland, Ohio	Oil, distilling	Sept. 25, 1866.
58,043	Andrews, Seth A	Farmers' Valley, Wis	Lock, alarm	Sept. 18, 1866.
57,841	Andrews, William J	Columbia, Tenn	Cultivators	Sept. 11, 1866.
58,968	Andrews, William R	Mystic River, Conn	Looms, mechanism for operating the harness of	Oct. 23, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,510	Andriot, Maurice	Mount Washington, Ohio	Jack, carriage	July 24, 1866.
58,198	Same	do	Jack, carriage	Sept. 25, 1866.
53,932	Angelini, Achille	Italy	Saddles and harness	Apr. 10, 1866.
59,538	Angell, Albert	Newburgh, N. Y	Hullers, coffee	Nov. 13, 1866.
60,320	Angell, Henry W	Waukesha, Wis	Brick or building blocks, manufacture of	Dec. 11, 1866.
57,062	Angus, R. B	Tremont, Pa	Casting throttle valves, mould for	Aug. 14, 1866.
53,254	Anthony, E. G	Boston, Mass	Coal-sifters	Mar. 20, 1866.
55,597	Anthony, Henry E	Providence, R. I	Bolt-heading machines	June 19, 1866.
	Anthony, Oren A., and Frederick Van Patten. (*See* Van Patten & Anthony.)			July 31, 1866.
56,691	Anton Gustav	Philadelphia, Pa	Parasols, feather-covered	Jan. 16, 1866.
52,109	Anton, Gustav, assignor to self, Jacob Hiner, and F. Brurien	do	Fans	Oct. 16, 1866.
58,748	Apgar, E. A. and A. C	do	Maps, geographical	Nov. 20, 1866.
59,807	Appelget, Thomas	Princeton, N. J	Mills, cider	Oct. 30, 1866.
59,157	Appleby, Alexander	Bromfield, Maine	Tanning, apparatus for	June 12, 1866.
55,450	Appleby, H. C	Conneaut, Ohio	Lamp-chimneys	
	Appleton, George. (*See* Duffee, Edward, assignor.)			
	Appleton, John A., jr. (*See* Duffee, Edward, assignor.)			
	Arata, Joseph. (*See* De l'Homme & Lazzaro, assignors.)			
	Archer, G. L., *et al.* (*See* Spear, Chauncey, assignor.)			Sept. 18, 1866.
58,044	Arleth, Ernst	Cincinnati, Ohio	Vinegar, apparatus for the manufacture of	June 26, 1866.
55,948	Armbrust, J. D. M., assignor to self and Jacob Freetly	Apolloborough, Pa	Broom-heads	Apr. 3, 1866.
53,553	Armes, D. D	Decorah, Iowa	Weighing and measuring grain	Apr. 3, 1866.
53,724	Armington, Wm. W., assignor to self and Stephen L. Usher	Meriden, Conn	Stove-blacking cutter	Oct. 2, 1866.
58,535	Armington, W. W., assignor to E. A. Kelsey	New Haven, Conn	Clothes pole	Jan. 30, 1866.
52,256	Armour, J. M	Craftsburg, Vt	Knitting-machine needles	May 15, 1866.
54,812	Armour, J. M., assignor to National Knitting Machine Company	do	Knitting machines	Feb. 27, 1866.
52,812	Arms, James C	Northampton, Mass	Shirt bosoms, paper	June 12, 1866.
55,451	Same	do	Bosoms and collars, paper	Dec. 4, 1866.
60,115	Same	do	Embossing machine	Sept. 11, 1866.
57,842	Armstrong, A	Gillespie, Ill	Drill, wheat	Sept. 18, 1866.
58,045	Armstrong, Aaron	do	Drill, seed, and cultivator combined	
	Armstrong, C. J., and B. F. (*See* Hickel, Sanford A., assignor.) Reissue.			May 8, 1866.
54,484	Armstrong, Francis	Pittsburg, Pa	Pump in deep wells, apparatus for protecting	June 5, 1866.
55,220	Armstrong, Harrison	Sparta, Wis	Horseshoes	Apr. 17, 1866.
53,940	Armstrong, James	Bucyrus, Ohio	Stone-dressing machine	
	Armstrong, John. (*See* Seitzinger, G., assignor.)			Mar 6, 1866.
2,273	Armstrong, John S	Prairie du Chien, Wis	Military cenotaph (Design)	Oct. 30, 1866.
2,497	Same	do	Military monument (Design)	Aug. 21, 1866.
57,432	Armstrong, Wilbur I., assignor to self and Solomon Dwight	Rockford, Ill	Gates	Mar. 20, 1866.
53,255	Armstrong, William	Newark, Ohio	Hook, snap	
	Armstrong, William, and Cyrus W. Saladee. (*See* Saladee & Armstrong.)			June 5, 1866.
55,800	Arnall, Wm. M., assignor to self and W. H. Brownell	Sperryville, Va	Separator and cleaner, grain	

55,801	Arnold, Alfred	Senafly, N. J	Boiler explosions, device to prevent	June 26, 1866.
56,158	Arnold, Benjamin	Arba, Ind	Stock, feeding trough for	July 10, 1866.
55,974	Arnold Charles	Chicago, Ill	Bosoms, paper and cloth	July 3, 1866.
56,692	Arnold, Francis	Haddam Neck, Conn	Sifter, meal and flour	July 31, 1866.
58,570	Same	....do	Vegetable cutter	Oct. 9, 1866.
	Arnold, L. L. (*See* Kast, J. G., assignor.)			
2,380	Same	New Britain, Conn	Coffin-handle (Design)	Aug. 14, 1866.
2,381	Same	....do	Coffin trimmings (Design)	Aug. 14, 1866.
2,382	Same	....do	Coffin trimmings (Design)	Aug. 14, 1866.
2,383	Same	....do	Coffin trimmings (Design)	Aug. 14, 1866.
2,384	Same	....do	Coffin trimmings (Design)	Aug. 14, 1866.
2,385	Same	....do	Coffin trimmings (Design)	Aug. 14, 1866.
2,386	Same	....do	Coffin trimmings (Design)	Aug. 14, 1866.
56,872	Arnold, Stephen D., assignor to self and F. W. Arnold	....do	Bridle-bit	Aug. 7, 1866,
58,749	Arnold, T. G	New York, N. Y	Gas purifiers, screens for	Oct. 16, 1866.
60,116	Same	....do	Chucks	Dec. 4, 1866.
55,035	Arnold, T. H	Troy, Pa	Hay forks, horse	May 29, 1866.
59,539	Same	....do	Hay forks, horse (Design)	Nov. 13, 1866.
58,750	Arnold, Varnum G	Providence, R. I	Egg beater	Oct. 16, 1866.
59,118	Arnold, William L., assignor to self and P. A. Gladwin	Winthrop, Conn	Curry combs	Oct. 23, 1866.
54,838	Arnold, W. M	New York, N. Y	Iron, wrought, with cast iron, method of combining. (Antedated May 18, 1866.)	May 22, 1866.
55,452	Some	....do	Iron and other metals, composition of	June 12, 1866.
59,540	Aronson, Joseph N	....do	Fire-arms, breech-loading	Nov. 13, 1866.
53,768	Arronquier, William	Worcester, Mass	Buildings, staging for	Apr. 10, 1866.
58,571	Same	....do	Staging	Oct. 9, 1866.
56,511	Arvin, John N	Valparaiso, Ind	Cultivators	July 24, 1866.
58,367	Arvine, F. W	New Haven, Conn	Skate	Oct. 2, 1866.
53,096	Ascherfeld, Theodore	Elkton, Md	Locks, mail	Mar. 13, 1866.
60,117	Ashcroft, Elias	South Boston, Mass	Oil can and lamp, lubricating. (Antedated November 29, 1866)	Dec. 4, 1866.
53,769	Ashcroft, E. H	Lynn, Mass	Peat, cistern for draining	Apr. 10, 1866.
54,088	Same	....do	Peat, machine for preparing	Apr. 24, 1866.
54,662	Same	....do	Car, railway	May 15, 1866.
54,663	Same	....do	Peat, apparatus for moulding and drying	May 15, 1866.
54,839	Same	....do	Peat, apparatus for preparing	May 22, 1866.
59,338	Same	....do	Boilers, steam pipes, &c., non-conducting covering for	Nov. 6, 1866.
55,221	Asheroft, John	Brooklyn, N. Y	Low-water detectors	June 5, 1866.
55,598	Same	New York, N. Y	Boilers, steam, mode of covering	June 19, 1866.
54,274	Ashley, Frederick	....do	Meat chopper	May 1, 1866.
55,802	Same	....do	Egg beater	June 26, 1866.
58,751	Same	....do	Carpet stretcher and tack holder	Oct. 16, 1866.
59,158	Same	....do	Clothes sprinkler	Oct. 30, 1866.
59,808	Same	....do	Lamp chimney cleaners	Nov. 20, 1866.
57,274	Ashley, Frederick, assignor to J. Edgar and J. E. Cavan	....do	File, letter	Aug. 21, 1866.
59,309	Ashley, Heman A., assignor to self and Edward M. Doty	Springfield, Ohio	Press, baling	Oct. 30, 1866.
58,769	Ashley, J. T	Brooklyn, E. D., N. Y	Corks from bottles, instrument for extracting	Oct. 23, 1866.
55,975	Ashton, James	Fall River, Mass	Oil cans	July 3. 1866.
53,770	Aspinall, Thomas M., and Stephen H. Whitlock	Piqua, Ohio	Heaters for chimneys	Apr. 10, 1866.
2,280	Aspinall, L. Augustus	Albany, N. Y	Diggers, potato (Reissue)	June 12, 1866.
54,664	Atchley, William C	Williamsburg, Ohio	Skiving machine	May 15, 1866.
55,222	Atherton, Abel T	Lowell, Mass	Tuyeres	June 5, 1866.
	Same. (*See* Flinn, Patrick.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,665	Atterbury, James S. and Thomas B	Pittsburg, Pa	Labels to bottles, mode of applying	May 15, 1866.
57,063	Same	do	Bells, smoke, method of making	Aug. 14, 1866.
59,159	Same	do	Jars, ring, process of making. (Antedated August 30, 1866)	Oct. 30, 1866.
51,908	Atwater, John B	Chicago, Ill	Water elevators, steam	Jan. 9, 1866.
52,011	Same	do	Pumps, cattle	Jan. 16, 1866.
53,097	Same	do	Air engines	Mar. 13, 1866.
54,089	Atwood, C	Lebanon, Ill	Ploughs, gang	Apr. 24, 1866.
51,909	Atwood, Frank B., and A. Elston	Lowell, Mass / Port Jervis, N. Y	Composition for razor straps	Jan. 9, 1866.
56,512	Atwood, James E	New York, N. Y	Skirts, hoop	July 24, 1866.
60,321	Atwood, James E	Trenton, N. J	Saws	Dec. 11, 1866.
54,275	Atwood, John E	Mansfield, Conn	Shafting, hangers for	May 1, 1866.
58,046	Same	do	Spinning frames, spindles for	Sept. 18, 1866.
53,941	Auberlin, T. A	San Francisco, Cal	Locks	Apr. 17, 1866.
55,792	Aubin, Jules	France	Mills, grinding	June 19, 1866.
54,666	Auchincloss, William S	New York, N. Y	Axle box cover	May 15, 1866.
55,976	Aughe, Jefferson	Dayton, Ohio	Hammers, drop	July 3, 1866.
58,536	Auld, James E., assignor to self and John M. Layton	Buffalo, N. Y	Match safe. (Antedated September 15, 1866)	Oct. 2, 1866.
	Aurora Iron Company. (*See* Weimer, P. L., assignor.)			
	Austin, B. H., jr., and Dolphus S. (*See* Gilmore, Aaron, assignor.)			
59,541	Austin, Charles	Concord, N. H	Stamping reed plates, machine for	Nov. 13, 1866.
58,368	Austin, Emmet R	Norwalk, Conn	Water elevators	Oct. 2, 1866.
54,485	Austin, Haines	East Liberty, Ohio	Carriage felloes, couplings for	May 8, 1866.
51,786	Austin, John	Rockford, Ill	Horses, securing shoes to the feet of	Jan. 2, 1866.
57,433	Austin, John, assignor to Alexander Austin	do	Horseshoes	Aug. 21, 1866.
2,176	Autenrieth, Jacob, assignor to Charles Goodyear, jr	New York, N. Y	Eyelet for lacing shoes (Reissue)	Feb. 20, 1866.
55,594	Averell, E. D	do	Ruling machines, electro-magnetic attachments to	June 12, 1866.
58,970	Avery, Egbert H	Belvidere, Ill	Buildings, apparatus for moving	Oct. 23, 1866.
51,787	Avery, Henry N	New York, N. Y	Fastenings, latch	Jan. 2, 1866.
56,344	Avery, Isaac	Ottawa, Ill	Cultivators	July 17, 1866.
54,276	Avery, Stephen L	Norwich, N. Y	Water elevators	May 1, 1866.
	Avis, Joseph W., and Augustus H. Tait. (*See* Tait & Avis.)			
	Same.			
	Same.			
56,159	Ayers, Jonathan	Canterbury, N. H	Harrows	July 10, 1866.
57,275	Aymmard, Guillaume	New York, N. Y	Tobacco bags, manufacture of	Aug. 21, 1866.
55,803	Ayres, Samuel W	Monticello, Ind	Water wheels	June 26, 1866.
55,977	Babbit, A. S	Keeseville, N. Y	Water elevators	July 3, 1866.
58,572	Babbit, Edwin Dwight	New York, N. Y	Pen holder	Oct. 9, 1866.
55,223	Babbs, Juan S. L	New Albany, Ind	Dovetailing machines	June 5, 1866.
55,453	Babcock, D. L	St. Charles, Minn	Wagons, bolster for	June 12, 1866.
56,873	Babcock, George H	Providence, R. I	Anchor stopper	Aug. 7, 1866.
58,199	Same	do	Darning last. (Antedated September 15, 1866)	Sept. 25, 1866.
54,090	Babcock, George H., and Stephen Wilcox, jr	do	Valves, cut-off	Apr. 24, 1866.

	Babcock, Nathan. (*See* Cottrell, C. B., assignor.)			
56,693	Babcock, Vantuyl	Manhall, Mich	Gates	July 31, 1866.
59,160	Babcock, W. E	East Pembroke, N. Y	Water elevators	Oct. 30, 1866.
52,949	Babson, David, 2d	Rockport, Mass	Cars, railway, wheels and axles for	Mar. 6, 1866.
	Bachelder, Asahel G., and Lafayette F. Thompson. (*See* Thompson & Bachelder.) Extension.			
55,196	Bachelder, William, assignor to self and J. Brabbury	West Newbury, Mass	Skirts, ladies', supporters for	May 29, 1866.
	Bachrach, J., *et al.* (*See* Smith, John W., assignor.)			
56,513	Backett, George	New York, N. Y	Salve	July 24, 1866.
	Bacon Arms Company. (*See* Vickers, John H., assignor.)			
56,846	Bacon, A. M., assignor to self and George E. H. Day	Washington, D. C	Fire-arms, breech-loading	July 31, 1866.
54,277	Bacon, Benjamin	Morrison, Ill	Clock escapements	May 1, 1866.
57,843	Same	do	Clocks, striking works for	Sept. 11, 1866.
	Bacon, E. S., *et al.* (*See* Rollins, J. A., assignor.) Reissue.			
57,244	Bacon, Fred. W., assignor to self and D. A. Strong	Washington, D. C	Boilers, culinary steamer for	Aug. 14, 1866.
57,056	Bacon, George Washington	Great Britain	Printing maps, constructing blocks or plates for	Aug. 7, 1866.
	Bacon Manufacturing Company. (*See* Converse & Hopkins, assignors.)			
	Bacon, Steuben S. (*See* Howard & Danglish, assignors.)			
	Badger, Ezra W., and Norman C. Roberts. (*See* Roberts & Badger.)			
51,788	Badger, John	Chicago, Ill	Steam generators	Jan. 2, 1866.
53,554	Badgley, Eugene F	Brooklyn, N. Y	Watches, safe-guards for	Apr. 3, 1866.
58,752	Badgley, Nathan E	New York, N. Y	Planting cotton seed, machine for	Oct. 16, 1866.
59,339	Same	do	Planter, cotton-seed. (Antedated October 4, 1866)	Nov. 6, 1866.
58,753	Badlam, Alexander, sr	San Francisco, Cal	Washing machine	Oct. 16, 1866.
60,610	Badore, Peter	Montpelier, Vt	Horseshoes, anvil for swaging calks for	Dec. 18, 1866.
57,034	Baer, Charles, assignor to self and J. W. Krietz	New York, N. Y	Type-setting machine	Aug. 7, 1866.
54,091	Baer, Johann Conrad	Cincinnati, Ohio	Faucets, beer	Apr. 24, 1866.
	Baer, John C., and C. Stierle. (*See* Stierle & Baer.)			
59,941	Bagg, Albert G	Holland Patent, N. Y	Cheese vats	Nov. 27, 1866.
57,064	Bagley, Charles H	Elgin, Ill	Lamps	Aug. 14, 1866.
56,139	Bagley, Charles H., assignor to C. E. Mason and P. S. Bartlett	do	Pockets, safety	July 3, 1866.
59,161	Bagley, Moses F	Alton, Ill	Vessels, device for discharging bilge water from the holds of	Oct. 30, 1866.
	Bagnicki, Ernest, *et al.* (*See* Oberlander, Weiss, & Bagnicki.)			
2,387	Bailey, Alonzo B	Middle Haddam, Conn	Coffin handle (Design)	Aug. 14, 1866.
55,036	Bailey, Andrew J	Charlestown, Mass	Corks, machines for cutting	June 26, 1866.
57,065	Bailey, B. A	Lewiston, Maine	Spinning flyers	Aug. 14, 1866.
	Bailey, George H. (*See* Heyl, John A., assignor.)			
	Bailey, George R. (*See* Church, Dwight M., assignor.)			
57,246	Bailey, Henry, and Bailey, Edwin L, assignors to Henry Bailey	Brooklyn, N. Y. Philadelphia, Pa.	Cocks, urn, drop-handle	Aug. 14, 1866.
55,804	Bailey, H. A., and A. R. Burdick	Racine, Wis	Rakes, horse	June 26, 1866.
55,454	Bailey, Jacob B	New York, N. Y	Curtain fixtures	June 12, 1866.
52,110	Bailey, John C., assignor to Charles Eugene Woodman	Boston, Mass	Shoes	Jan. 16, 1866.
	Bailey, Joseph. (*See* Phelps, James N., assignor.)			
	Bailey, J. W., and William K. Lewis. (*See* Lewis & Bailey.)			
55,599	Bailey, Leonard	Boston, Mass	Spoke shaves	June 19, 1866.
60,611	Bailey, Robert	Idaho City, I. T	Steam generators	Dec. 18, 1866.
53,098	Bailey, Selden A	Waterford, Mass	Clothes wringer	Mar. 13, 1866.
53,099	Same	do	Clothes wringer, bench for	Mar. 13, 1866.
54,092	Bailey, Thomas K	Lockport, N. Y	Churns	Apr. 24, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,739	Bailley, N. C. Durand, G. H. Mesnard, and Z. Porrier	France, France, England, England	Machinery, anti-friction device for the axles of	Oct. 9, 1866.
57,658	Bailor, John	Cannon City, Minn	Car-coupling	Sept. 4, 1866.
52,502	Baines, Hugh	Great Britain	Railroad rails, machine for welding the ends of	Feb. 6, 1866.
53,240	Same	England	Railroad track	Mar. 13, 1866.
60,322	Same	do	Metal, machines for rolling	Dec. 11, 1866.
55,037	Baird, J. M	Wheeling, West Va	Water cooler and purifier	May 29, 1866.
52,813	Baker, Christopher D	do	Furnace, puddling	Feb. 27, 1866.
56,874	Baker, C. L. W	Hartford, Conn	Coal scuttle and sifter	Aug. 7, 1866.
58,200	Baker, Collins B	Troy, N. Y	Brick machine	Sept. 25, 1866.
	Baker, C. S. (*See* Hill, Warren S., assignor.)			
54,641	Baker, D. B., assignor to self and D. S. Miller	Rollersville, Ohio	Gates	May 8, 1866.
59,542	Baker, D. B., and P. S. Miller	do	Pulley suspension hooks	Nov. 13, 1866.
54,667	Baker, Daniel W	Harwich, Mass	Meat chopper	May 15, 1866.
60,118	Baker, Frederick M	South Reading, Mass	Stoves, cooking. (Antedated November 22, 1866)	Dec. 4, 1866.
56,160	Baker, George E	Waukegan, Ill	Bells, mode of hanging	July 10, 1866.
2,363	Baker, George R	St. Louis, Mo	Dough, machine for kneading (Reissue)	Sept. 25, 1866.
57,452	Baker, H. G., F. Holmes, and R. D. King	Cortland, N. Y	Cream, machine for straining	Aug. 21, 1866.
56,161	Baker, Halsey H	New Market, N. J	Horseshoe	July 10, 1866.
58,573	Same	do	Horseshoe	Oct. 9, 1866.
55,600	Baker, Haydn M	Rochester, N. Y	Carbonate of soda, manufacture of	June 19, 1866.
57,458	Same	do	Soda and potash, bicarbonate of, and hydrochloric acid, manufacture of.	Aug. 28, 1866.
54,093	Baker, Haydn M., assignor to self, A. M. Hastings, and A. McVean.	do	Alkali, waste process for recovering	Apr. 24, 1866.
58,935	Baker, Haydn M., assignor to A. M. Hastings and A. McVean	do	Bleaching fibrous materials, process for	Oct. 16, 1866.
60,119	Baker, Haydn M., assignor to self and Robert J. Lester	do	Glass, process for manufacture of	Dec. 4, 1866.
	Baker, Henry B. (*See* White, N. B., assignor.)			
55,978	Baker, Henry O	New York, N. Y	Curtain fixtures	July 1, 1866.
55,979	Baker, Horace	Cortland, N. Y	Rakers and loaders, hay	July 3, 1866.
58,754	Same	do	Barrel machinery	Oct. 16, 1866.
	Baker, John, and Henry W. Dennis. (*See* Dennis & Baker.)			
56,342	Baker, John G	Philadelphia, Pa	Faucets, measuring	July 10, 1866.
53,725	Baker, John G., assignor to Henry Disston	do	Saw grinding machines	Apr. 3, 1866.
54,813	Same	do	Saw grinding machines	May 15, 1866.
	Baker, Joseph W. (*See* Burns, John, assignor.)			
57,066	Baker, Milton G	New Burlington, Ohio	Rake, garden	Aug. 14, 1866.
	Baker, O. T., and W. R. Elder. (*See* Elder & Baker.)			
54,094	Baker, Sarah J	Chicago, Ill	Stocking heel protectors	Apr. 24, 1866.
57,659	Baker, Seth W	Providence, R. I	Fabric, woven	Sept. 4, 1866.
52,125	Baker, William C	New York, N. Y	Bit, curb	Jan. 23, 1866.
58,755	Same	do	Heat, use of hydrocarbon liquids for transmitting	Oct. 16, 1866.
60,459	Same	do	Steam generators	Dec. 18, 1866.

	Baker, William E., and William O. Grover. (*See* Grover & Baker.) Extension.			
59,340	Baker, William S. G	Baltimore, Md	Engines, locomotive	Nov. 6, 1866.
56,162	Bakes, Frederick G	Vevay, Ind	Broom head	July 10, 1866.
	Bakewell, Thomas. (*See* Lippincott, John, assignor.)			
56,514	Balch, F. A	Hingham, Wis	Stovepipe drum or heat radiator	July 24, 1866.
57,844	Same	do	Whiffletrees	Sept. 11, 1866.
57,459	Balding, A	Madison, Ind	Evaporators	Aug 28, 1866.
58,206	Baldwin, Aaron C	Boston, Mass	Engines, steam, rotary	Sept. 25, 1866.
59,753	Balding, George W	Pleasant, Ind	Gates and gate posts	Nov. 20, 1866.
55,601	Baldwin, Cyrus W	Boston, Mass	Air engines, hot	June 19, 1866.
53,771	Baldwin, Cyrus W., and Lorenzo D. Hawkins	Charlestown, Mass. / Stoneham, Mass.	Leather-splitting machine	Apr. 10, 1866.
57,618	Baldwin, C. W., assignor to self, W. D. Richards, and W. E. Russell.	Boston, Mass	Car-coupling	Aug. 28, 1866.
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Horace. (*See* Melten, George R., assignor.)			
55,038	Baldwin, James S	New York, N. Y	Carbonic acid from mixtures of gases, method of selecting and separating.	May 29, 1866.
55,039	Same	do	Carbonic acid gas, method of preserving and storing	May 29, 1866.
55,040	Same	do	Carbonic acid, method of charging water with	May 29, 1866.
54,486	Baldwin, J. W	Sidney, N. J	Mills, grinding	May 8, 1866.
56,515	Baldwin, Silas D	Chicago, Ill	Supporters, sash	July 24, 1866.
54,668	Baldwin, W. H	do	Cans, tin, machine for opening	May 15, 1866.
59,543	Baldwin, W. R	Philadelphia, Pa	Planter, corn	Nov. 13, 1866.
	Bales, Moses, and Charles R. Warner. (*See* Warner & Bales.)			
53,726	Ball, Charles A., assignor to self and Thomas Livey	New York, N. Y	Hook, check	Apr. 3, 1866.
57,067	Ball, Cortland, and J. W. Haughtelin	Detroit, Mich	Grubbing machine	Aug. 14, 1866.
	Ball, James, and Hugh Brooks. (*See* Brooks & Ball.)			
	Ball, Marcus D. (*See* Cottrell, Isaac B., assignor.)			
	Ball, Milton, and Henry Fisher. (*See* Fisher & Ball.)			
	Same.			
	Same.			
53,555	Ball, Phinehas	Worcester, Mass	Cock, gauge	Apr. 3, 1866.
	Ball, R., & Co. (*See* Plummer, Frank J., assignor.)			
	Ball, Thomas D. (*See* Miller, Oliver, assignor.)			
	Ballance, Joseph L., and Rosewell Wakeman. (*See* Wakeman & Ballance.)			
55,041	Ballard, Achilles	Dublin, Ind	Shoe	May 29, 1866.
57,815	Ballard, Jacob, and Thomas J. Magee, assignors to selves and Paul Hutts.	New Antioch, Ohio / Cincinnati, Ohio	Ditching machine	Sept. 4, 1866.
60,612	Ballard, James	Almont, Mich	Washing machine	Dec. 18, 1866.
53,556	Ballard, M. L	Canton, Ohio	Carriage springs, &c	Apr. 3, 1866.
59,310	Ballard, M. L., assignor to Ballard, Fast & Co	do	Pitman connections	Oct. 30, 1866.
52,012	Ballard, William	Brooklyn, N. Y	Dentistry	Jan. 16, 1866.
2,323	Ballinger, Charles, assignor to McKee & Brothers	Pittsburg, Pa	Goblet (Design)	May 22, 1866.
	Ballou, C. H. (*See* Bartholomew, E. S., assignor.)			
55,224	Ballou, D	Havanna, N. Y	Tire-bending machines	June 5, 1866.
	Ballou, Deborah A. (*See* Hyde, Walter, assignor.)			
55,197	Ballou, Francis D., assignor to Alfred B. Ely	Abington, Mass	Buckle clasp	May 29, 1866.
58,047	Balzart, John A	Piqua, Ohio	Churns	Sept. 18, 1866.
53,557	Bancroft, L. F	Worcester, Mass	Sprinkler, street	Apr. 3, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Bancroft, William H., and James Woodford. (*See* Woodford & Bancroft.)			
	Bang, H. I., *et al.* (*See* Bender, John J., assignor.)			
	Bang, Henry J. (*See* Müller, George, assignor.)			
54,278	Bannister, David	Philadelphia, Pa	Tongs, gas-pipe	May 1, 1866.
	Banks, F W. (*See* Nelson, Charles, assignor.)			
58,971	Barager, Charles F	Candor, N. Y	Butter worker and packer	Oct. 23, 1866.
56,516	Barbarin, Arthur	New Orleans, La	Bottle stopper	July 24, 1866.
58,574	Same	do	Band fastening, metallic	Oct. 9, 1866.
59,754	Same	do	Lighting gas	Nov. 20, 1866.
51,910	Barbaroux, E	Louisville, Ky	Pipe coupling	Jan. 9, 1866.
59,544	Barber, Ira S	New York, N. Y	Cigars, mouth-piece for	Nov. 13, 1866.
55,759	Barber, James W., assignor to self and Elisha P. Stout	Cincinnati, Ohio	Press, tobacco	June 19, 1866.
	Barber, Robert. (*See* Sawyer, David, assignor.)			
	Barber, Samuel E., *et al.* (*See* Denton, Charles, assignor.)			
	Same.			
	Barber, S. S. (*See* Mason, L. G., assignor.)			
59,545	Barden, George F	Dover, N. H	Clothes pin or clamp	Nov. 13, 1866.
	Bardsley, J., and M. Hall. (*See* Whitling, John H., assignor.)			
54,998	Bardwell, Anna M., assignor to C. D. Clapp and H. J. Bardwell	Amherst, Mass	Skirts, hoop	May 22, 1866.
54,279	Bare, Abraham	Mexico, Ohio	Funnel, sorghum	May 1, 1866.
59,809	Barringer, John I	Germantown, N. Y	Furnace, smoke, for curing meat, &c	Nov. 20, 1866.
53,391	Barker, B. F	San Francisco, Cal	Spring, door	Mar. 27, 1866.
55,455	Barker, Henry T	Napa, Cal	Fruit boxes, fastening for	June 12, 1866.
58,756	Barker, Hiram	Aurora, Ind	Washing machine	Oct. 16, 1866.
	Barker, James W. (*See* Green, John, assignor.)			
59,162	Barker, Silas	Hartford, Conn	Carriage axles	Oct. 30, 1866.
54,460	Barker, William, and Gaylord Martin, assignors to Empire State Brick Machine Company.	Schenectady, N. Y	Brick press	May 1, 1866.
	Barker, William, and William C. Wren. (*See* Wren & Barker.)			
57,660	Barley, J. H	Longwood, Mo	Cultivators	Sept. 4, 1866.
58,972	Barlow, A. B	Ripon, Wis	Pumps	Oct. 23, 1866.
58,936	Barlow, James C., assignor to self and J. B. Hamilton	Brimfield, Mass	Lid supporter	Oct. 16, 1866.
	Barnaby, H. (*See* Thompson, J. W., assignor.)			
54,487	Barnard, A. G	Seville, Ohio	Gate, fence	May 8, 1866.
60,120	Barnard, Newell, and J. G. Spiller	Saginaw City, Mich	Salt block, apparatus for the manufacture of	Dec. 4, 1866.
2,209	Barnard, William B	Waterbury, Conn	Lamp trimmers and shears (Reissue)	Mar. 27, 1866.
57,460	Same	do	Lamp chimney cleaner	Aug. 28, 1866.
	Barnard, W. B., and G. H. Seymour. (*See* Seymour & Barnard.)			
59,942	Barnes, Alfred	Williamsburg, N. Y	Boxes, sheet-metal, manufacture of	Nov. 27, 1866.
57,035	Barnes, Charles, assignor to Warden, Rensford & Co	Cincinnati, Ohio	Pump, steam jet	Aug. 7, 1866.
54,280	Barnes, Henry	Burlington, Wis	Cultivators	May 1, 1866.
59,163	Barnes, James T	Hudson City, N. J	Casters, furniture	Oct. 30, 1866.
53,942	Barnes, John	Rockford, Ill	Harvester rakes	Apr. 17, 1866.
2,263	Barnes, John H	Brooklyn, N. Y	Lock, door (Design)	Feb. 13, 1866.

53,727	Barnes, John H., and Thomas W. Brown	Brooklyn, N. Y	Curtain fixture	Apr. 3, 1866.
52,658	Barnes, Joshua	New York, N. Y	Bed bottom, spring. (Antedated February 5, 1866)	Feb. 20, 1866.
56,484	Barnes, Joshua, assignor to Isaac A. Singer	do	Bed bottom springs	July 17, 1866.
59,164	Barnes, Lewis	Waterford, Mich	Whiffletrees	Oct. 30, 1866.
53,256	Barnes, Noble P	Carmel, N. Y	Cans, milk	Mar. 20, 1866.
56,345	Barnes, Samuel H	New York, N. Y	Corset springs, extension	July 17, 1866.
59,943	Barnes, Wallace	Bristol, Conn	Springs, clocks', method of tempering	Nov. 27, 1866.
52,377	Barnes, W. A	Decatur, Ill	Pumps	Feb. 6, 1866.
52,814	Barnes, W. W	Lynn, N. H	Hay, machines for taking and loading	Feb. 27, 1866.
53,257	Barnett, Joseph	Dayton, Ohio	Clothes dryer	Mar. 20, 1866.
52,126	Barnett, William N	Urbana, Ohio	Carriage top prop-blocks	Jan. 23, 1866.
58,048	Barney, Benjamin	Time, Ill	Grain, machine for cleaning	Sept. 18, 1866.
60,121	Barney, Charles J	Edgartown, Mass	Bag holder	Dec. 4, 1866.
52,013	Barney, E. H	Springfield, Mass	Skate	Jan. 16, 1866.
2,332	Barney, Samuel E., assignor to the Elm City Company	New Haven, Conn	Trade mark (Design)	June 12, 1866.
	Barney, William, and Alexander Carmichel. (*See* Carmichel & Barney.)			
	Barney, William C. (*See* Stuckenwrath, Albert, assignor.)			
58,973	Barnhart, Peter	Chillicothe, Ohio	Plough, corn	Oct. 23, 1866.
	Barns, T., and P. Lugenbell. (*See* Lugenbell & Barns.)			
2,163	Barnum, Daniel	New York, N. Y	Sewing machine guide (Reissue)	Jan. 30, 1866.
54,669	Barr, Orlando, and Franklin F. Cox	Beloit, Wis	Cultivators	May 15, 1866.
58,201	Barr, Robert J	Philadelphia, Pa	Trap for removing water from steam heating and evaporating apparatus.	Sept. 25, 1866.
58,049	Barr, William N	Richmond, Ind	Stripper, cane	Sept. 18, 1866.
60,460	Barrabe, E. P	France	Hulling wheat, machine for	Dec. 18, 1866.
55,980	Barrett, J. C	Stamford, Conn	Water elevators	July 3, 1866.
59,531	Barrett, Michael	Toronto, C. W	Process for the recovery and purification of sulphuric acid used in refining petroleum.	Nov. 6, 1866.
	Barrett, M. E., *et al.* (*See* Dean, Chester, assignor.)			
59,341	Barrett, Pardon	Jackson, Pa	Table, revolving	Nov. 6, 1866.
52,513	Barry, Charles, and O. W. Preston	Corning, N. Y	Irons, sad	Feb. 13, 1866.
55,225	Barstow, A. C	Providence, R. I	Stoves, cooking	June 5, 1866.
54,672	Barta, Joseph	La Crosse, Wis	Harvesters, raking and binding attachments to	May 15, 1866.
2,241	Bartholem, F. H	New York, N. Y	Water-closet valves (Reissue)	May 15, 1866.
54,488	Bartholomas, Carl	do	Composition for gold size	May 8, 1866.
60,462	Bartholomew, E. S., assignor to self and C. H. Ballou	Westfield, N. Y	Preserving fruits, meats, and other substances	Dec. 18, 1866.
56,875	Bartlett, Clara A	Oakland, Cal	Saddles, side	Aug. 7, 1866.
57,461	Bartlett, David L., and George H. Johnson	Baltimore, Md	Brick	Aug. 28, 1866.
57,462	Same	do	Structures, double cylindrical, construction of	Aug. 28, 1866.
52,014	Bartlett, Ezekiel M	Louisiana, Mo	Specula for uterine diseases	Jan. 16, 1866.
60,461	Bartlett, Ira W	Otter Creek, Ill	Ploughs	Dec. 18, 1866.
	Bartlett, J. A., and D. P. Lacey. (*See* Lacey & Bartlett.)			
58,974	Bartlett, John W	Harmar, Ohio	Straw cutters. (Antedated October 12, 1866)	Oct. 23, 1866.
2,210	Bartlett, Joseph W	New York, N. Y	Sewing machines (Reissue)	Mar. 27, 1866.
2,295	Same	do	Sewing and embroidering machines, frames of a (Design)	May 1, 1866.
	Bartlett, P. S., and C. E. Mason. (*See* Bagley, Charles H., assignor.)			
	Bartlett, R., *et al.* (*See* Taggart, J., assignor.) Reissue.			
53,517	Bartlett, Robert M., assignor to Sarah T. Bartlett	Cincinnati, Ohio	Boxes, &c., sealing	Mar. 27, 1866.
59,810	Bartlett, W. F	Hillsdale, Mich	Lantern and foot warmer, combined	Nov. 20, 1866.
55,226	Bartlett, William O	New York, N. Y	Bridle, breaking and training	June 5, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
57,845	Bartley, Robert	Norwalk, Ohio	Weather strip	Sept. 11, 1866.
53,943	Bartling, C. F	Greenville, Ohio	Looms	Apr. 17, 1866.
	Barto, Oliver D., and William Bellairs. (*See* Bellairs & Barto.)			
60,463	Bartol, B. H	Philadelphia, Pa	Low-water detectors	Dec. 18, 1866.
60,323	Bartol, William C	Huntingdon, Pa	Brick machine	Dec. 11, 1866.
58,575	Barton, Harvey	Black Earth, Wis	Wagon, dumping	Oct. 9, 1866.
58,576	Barton, Hiram	East Hampton, Conn	Bell, house	Oct. 9, 1866.
52,514	Barton, Joseph	Battle Creek, Mich	Stovepipe damper	Feb. 13, 1866.
52,659	Same	do	Collars, paper and cloth	Feb. 20, 1866.
56,346	Barton, J. D., F. S. Rogers, and D. Fisher	Kalamazoo, Mich	Anvil and vice, combined	July 17, 1866.
59,944	Barton, Richard T	New Haven, Conn	Paper boxes, apparatus for making	Nov. 27, 1866.
52,257	Bartram, W. B	Norwalk, Conn	Casters for furniture, mode of attaching	Jan. 30, 1866.
54,670	Same	do	Sewing machines for stitching cord to the edge of fabrics	May 15, 1866.
54,671	Same	do	Sewing machine for stitching eyelet holes	May 15, 1866.
2,245	Bartram, W. B., assignor through mesne assignments to the Bartram and Fanton Manufacturing Company.	Danbury, Conn	Sewing machine for stitching button-holes (Reissue)	May 15, 1866.
	Bartram, William M., and Joseph H. Springer. (*See* Springer & Bartram.)			
58,757	Bascom, Elias	New York, N. Y	Globes	Oct. 16, 1866.
52,815	Bashford, Truman P	Decatur, Mich	Drilling machine	Feb. 27, 1866.
56,876	Bashore, D. W	Erie, Pa	Washstand and desk	Aug. 7, 1866.
58,758	Basse, August	Quincy, Ill	Lathes, wood-turning	Oct. 16, 1866.
54,840	Bassett, C. H	Derby, Conn	Carriage thills, couplings for	May 22, 1866.
2,357	Bassett, John A., assignor to Thomas D. Worrall	Salem, Mass	Gases for illumination, process and apparatus for carburetting. (Reissue.)	Sept. 18, 1866.
58,577	Bassett, O. L., T. R. Bearse, and W. B. Wilber	Taunton, Mass	Nails and tacks, machine for making	Oct. 9, 1866.
	Bassett, R. M. and T. S. (*See* Hawkins, Moses, assignor.)			
55,042	Batchelder, Hazen J	Boston, Mass	Horseshoes, machine for bending	May 29, 1866.
55,602	Same	do	Horseshoes, machine for making	June 19, 1866.
59,755	Same	do	Horseshoes, manufacture of blanks for	Nov. 20, 1866.
53,100	Batchelder, William J. M., and Celestine Leiber	Dayton, Ohio Harrisburg, Ohio	Ploughs	Mar. 13, 1866.
57,276	Batchelder, W. W	New York, N. Y	Burner, vapor	Aug. 21, 1866.
53,258	Batcheller, J. C	Wallingford, Vt	Forks, machine for forming the shoulders on	Mar. 20, 1866.
59,119	Batchellor, Solomon C., assignor to self and W. C. Davis & Co	Cincinnati, Ohio	Stove doors	Oct. 23, 1866.
52,816	Bateman, Horatio, and David Cumming, jr	New York, N. Y	Wells, oil and other, drills for	Feb. 27, 1866.
56,877	Bates, Caleb	Kingston, Mass	Crushing, rolling, and kneading machine	Aug. 7, 1866.
	Bates, C. Francis. (*See* Faure, Cyprien, assignor.)			
55,603	Bates, Horatio K	North La Crosse, Wis	Grate bar	June 19, 1866.
54,095	Bates, L. M	Newark, Ohio	Ploughs	Apr. 24, 1866.
54,841	Batey, J. R	New York, N. Y	Irons, sad, hand protectors for	May 22, 1866.
59,165	Battell, Monroe L	do	Quartz crushers	Oct. 30, 1866.
56,878	Battell, William	Quincy, Ill	Ploughs, gang	Aug. 7, 1866.
54,461	Battley, Edwin, assignor to self and James Crane	Mount Clair, N. J	Varnish, manufacture of. (Antedated April 16, 1866)	May 1, 1866.

57,059	Batty, William	Troy, N. Y	Iron and steel for the manufacture of railroad rails, uniting	Aug. 7, 1866.
53,392	Bauder, C. F. A	Newark, N. J	Vegetable cutter	Mar. 27, 1866.
60,464	Bauder, C. L	Cleveland, Ohio	Chair, invalid travelling	Dec. 18, 1866.
58,959	Baudet, Hubert C	France	Musical instruments, keyed	Oct. 16, 1866.
59,946	Baugh, George H	Oskaloosa, Iowa	Medicine for hog cholera	Nov. 27, 1866.
53,393	Baughman, D. C	Fort Seneca, Ohio	Saw-mills, head blocks for	Mar. 27, 1866.
57,068	Baughman, D. C	Tiffin, Ohio	Seeding machines, mode of hitching horses to	Aug. 14, 1866.
59,342	Bauhoefer, Louis	Philadelphia, Pa	Cork for mattresses, &c., method of treating	Nov. 6, 1866.
59,945	Same	do	Cushion or mattress. (Antedated November 3, 1866)	Nov. 27, 1866.
55,198	Baum, George L., assignor to self and Herman A. Doster	Bethlehem, Pa	Shaft coupling	May 29, 1866.
55,043	Baumann, Adam	Philadelphia, Pa	Pruning shears	May 29, 1866.
59,947	Baumann, F	Chicago, Ill	Steam generator	Nov. 27, 1866.
53,728	Baumgarten, Moritz, assignor to self, J. Heller, G. C. Clark, A. S. Keeler, and M. Steinhart.	New Haven, Conn	Organs, &c., key-boards for	Apr. 3, 1866.
55,573	Same	do	Organs, &c., valve arrangement for	June 12, 1866.
	Bausehliker, Friederik, and Joseph Paudler, jr. (*See* Paudler & Bausehliker.)			
57,846	Bausman, A. L	Minneapolis, Minn	Gunbarrels, expanding scraper for cleaning	Sept. 11, 1866.
2,240	Bawsel, J. A., assignor to Alexander Harthill	New York, N. Y	Presses, tobacco (Reissue)	May 8, 1866.
60,324	Baxendale, Samuel	Boston, Mass	Batting and wadding	Dec. 11, 1866.
58,711	Baxendale, Samuel, assignor to self, T. H. Dunham, and S. B. Thaxter.	do	Fibrous material, machine for picking and opening. (Antedated, September 23, 1866.)	Oct. 9, 1866.
	Baxter, Freeman, and Peleg A. Sherman. (*See* Sherman & Baxter.)			
56,517	Baxter, John N	Greensburg, Ind	Rakes, horse	July 24, 1866.
57,661	Bayer, Charles J	Poughkeepsie, N. Y	Railway switch	Sept. 4, 1866.
	Bayer, George, and Joseph Loch. (*See* Loch & Bayer.)			
55,982	Bayley, Alfred	Newark, N. J	Washstands	July 3, 1866.
56,879	Bayliss, John	New York, N. Y	Tuyere	Aug. 7, 1866.
56,880	Baylor, C. F	Clinton, N. J	Grain cleaner	Aug. 7, 1866.
58,050	Baylor, C. F	Trenton, N. J	Screen, grain	Sept. 18, 1866.
59,343	Bayne, E. M	Uniontown, Pa	Broom head	Nov. 16, 1866.
56,485	Bazin, James A., assignor to self, A. B. Hall, C. Scott, and W. J. Towne.	Canton, Mass	Cordage, webbing, &c., machine for making	July 17, 1866.
59,739	Beach, A. Ely	Stratford, Conn	Letters, parcels, &c., method of receiving and delivering	Nov. 13, 1866.
54,814	Beach, Albert N., assignor to self and Edward Hatch	Winsted, Conn	Stove, heating	May 15, 1866.
	Beach, Allen. (*See* Gilmore, Henry H., assignor.) Reissue.			
53,772	Beach, Burroughs	West Meriden, Conn	Tree protectors	Apr. 10, 1866.
56,347	Same	do	Fastening, sash	July 17, 1866.
56,486	Beach, Burroughs, assignor to self and E. A. Thorp	do	Bottle, caster	July 17, 1866.
57,277	Beach, Charles	Penn Yan, N. Y	Presses, cider and wine	Aug. 21, 1866.
57,662	Beach, Frederick C., and Alex. A. C. Klauke	Stratford, Conn Washington, D. C	Knife and fork	Sept. 14, 1866.
	Beach, G. W., *et al.* (*See* Eggleston, John C., assignor.)			
56,348	Beach, Henry H	Rome, N. Y	Drier, grain	July 17, 1866.
54,281	Beach, S. W	Niles, Mich	Bed bottom	May 1, 1866.
57,036	Beach, Thomas, assignor to self and Stanley R. Moorhead	Freeport, Pa	Caster	Aug. 7, 1866.
56,881	Beach, William	Philadelphia, Pa	Privy seat covers	Aug. 7, 1866.
57,069	Beach, William	Albany, N. Y	Malt shovel	Aug. 14, 1866.
55,805	Beach, William W	New York, N. Y	Buildings, roofs of	June 26, 1866.
57,278	Same	do	Tumbler, skeleton	Aug. 21, 1866.
	Beacher, T. N., *et al.* (*See* Winter, William, assignor.)			
53,259	Beal, Ezra F	Oxford, Maine	Screen, window	Mar. 20, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,578	Beale, Thomas	New Milford, Ill.	Cultivator	Oct. 9, 1866.
60,325	Beall, J. B., and B. F. Grime	Westerville, Ohio	Scraper, road	Dec. 11, 1866.
52,258	Beals, Fordyce	New Haven, Conn	Fire-arms, breech-loading	Jan. 30, 1866.
57,847	Same	....do	Hook, snap	Sept. 11, 1866.
51,911	Beals, Fordyce, and Major Smith	....do	Augers, hollow	Jan. 9, 1866.
53,773	Beals, J. S	Alabama Centre, N. Y	Ploughs	Apr. 10, 1866.
51,890	Bean, E. E., assignor to self and Jacob Chickering	Abington, Mass	Sewing machines	Jan. 2, 1866.
52,660	Bean, John	Hudson, Mich	Pumps	Feb. 20, 1866.
	Bean, John, and Alonzo Palmer. (*See* Palmer & Bean.)			
52,950	Beard, George	Salineville, Ohio	Measures, tailors'	Mar. 6, 1866.
52,951	Same	Philadelphia, Pa.	Measures, tailors'	Mar. 6, 1866.
57,463	Beard, George A	Washington county, Md	Ploughs, mould-boards for	Aug. 28, 1866.
58,760	Beard, G. N	St. Louis, Mo	Hoop locks	Oct. 16, 1866.
56,349	Beard, Josiah, and Moses Fairbanks	Boston, Mass	Bottle stopper	July 17, 1866.
	Beard, William H., and Geo. W. Prugh. (*See* Prugh & Beard.)			
56,882	Beardsley, W. L	Binghamton, N. Y	Lasts	Aug. 7, 1866.
57,070	Bearly, David	Newcastle, Ind	Vegetable cutter	Aug. 14, 1866.
58,975	Bearse, F., and G. E. Hopkins	Barnstable, Mass	Roofing, composition for	Oct. 23, 1866.
	Bearse, T. R., *et al.* (*See* Bassett, Bearse & Wilber.)			
	Becher, Charles K., *et al.* (*See* Smiley, Becher & Townsend.)			
55,983	Beck, George	Rochester, N. Y	Beverage	July 3, 1866.
57,071	Becker, H. C	New York, N. Y	Drug crushers, portable	Aug. 14, 1866.
55,044	Beckers, Alexander	....do	Stereoscopes	May 29, 1866.
55,604	Same	....do	Wood, ornamenting	June 19, 1866.
55,984	Beckett, Solomon	Olive Branch, Ohio	Ploughs	July 3, 1866.
55,985	Beckwith, B. M	Plattsburg, N. Y	Carriage springs	July 3, 1866.
60,326	Beckwith, E	South Pass, Ill	Washing machine	Dec. 11, 1866.
59,811	Beckwith, E. H	Westernville, N. Y	Churns	Nov. 20, 1866.
60,122	Beckwith, Hiram	Grass Lake, Mich	Scaffold bracket	Dec. 4, 1866.
53,101	Beckwith, S. R	Cleveland, Ohio	Granaries, fruit houses, &c	Mar. 13, 1866.
56,163	Beckwith, S. V	Hamden, Conn	Oilers, attaching tubes to	July 10, 1866.
58,711	Beckwith, S. V., assignor to self and T. B. Carpenter	....do	Shelf, adjustable, for stove pipes, &c	Oct. 9, 1866.
53,558	Bedell, S. C	Red Bank, N. J	Boot and shoe heels, tool for trimming. (Antedated March 30,'66)	Apr. 3, 1866.
	Bedford, Wm. G., and Thomas R. White. (*See* White & Bedford.)			
53,774	Bedle, William	Keyport, N. J	Table, extension	Apr. 10, 1866.
55,227	Same	....do	Cradle	June 5, 1866.
51,912	Bee, Benjamin F	Harwich, Mass	Salinometers	Jan. 9, 1866.
54,096	Same	....do	Screw tap	Apr. 24, 1866.
2,347	Same	....do	Salinometers (Reissue)	Sept. 5, 1866.
52,817	Beebe, Hubbard	New Haven, Conn	Bosoms, linen, apparatus for folding	Feb. 20, 1866.
53,077	Beebe, James, assignor to self and H. Huber	Chicago, Ill	Stove-pipe drum and oven	Mar. 6, 1866.
60,327	Beebe, J. W., and T. F. Lloyd	New York, N. Y	Distilling grain, apparatus for	Dec. 11, 1866.
55,986	Beebe, Ormus D	Beaver Dam, Wis	Washing machines	July 3, 1866.
52,952	Beechley, John	Dayton, Ohio	Evaporator	Mar. 6, 1866.
57,663	Beeler, S. I	Wales, Ill.	Soap	Sept. 4, 1866.

60,328	Beeler, S. J	Wales, Ill	Soap	Dec. 11, 1866.
51,789	Beeman, Ephraim	Owego, N. Y	Knife sharpener and polisher	Jan. 2, 1866.
57,848	Beeman, William M	Hartford, Conn	Time keepers, regisers for regulating	Sept. 11, 1866.
52,485	Beemer, Levi, assignor to self and J. H. Williamson	Libertyville, N. J	Pumps	Feb. 6, 1866.
57,279	Beer, Joseph W., and John B. Wampler	Shelbyville, Ill	Ploughing, device for burying weeds and stubble while	Aug. 21, 1866.
55,987	Beers, George W	Bridgeport, Conn	Hinge, carriage	July 3, 1866.
	Beers, Geo. W., and C. S. Pangborn. (*See* Pangborn & Beers.)			
	Beesley, Jacob, *et al.* (*See* Martino, Beesley & Currie.) Design.			
	Same.			
	Same.			
	Same.			
59,948	Beetison, Israel	New Britain, Conn	Mandrels, expanding	Nov. 27, 1866.
55,045	Behel, Jacob, and John M. Buell	Rockford, Ill	Horseshoes	May 29, 1866.
53,915	Behrens, Henry I., assignor to self, Henry C. and Edward Dart	New York, N. Y	Engines, rotary	Apr. 10, 1866.
56,350	Beidler, Charles	Allentown, Pa	Ploughs	July 17, 1866.
55,806	Beidler, Jacob H	Lincoln, Ill	Lamps	June 26, 1866.
57,464	Same	....do	Box, delivery, post office	Aug. 28, 1866.
53,103	Beidler, Jacob H., and A. R. Crihfield	....do	Lamps, kerosene	Mar. 13, 1866.
55,228	Belbin, Charles T	Baltimore, Md	Boats, oyster, dredge roller for	June 5, 1866.
59,812	Belbin, William	....do	Oyster-dredging apparatus	Nov. 20, 1866.
58,537	Belcher, William, assignor to self and F. G. Hickerson	New Hartford, Conn	Light, cigar	Oct. 2, 1866.
51,790	Belden, Charles	Middlebury, Ohio	Cultivators, gang	Jan. 2, 1866.
52,515	Same	....do	Cultivators	Feb. 13, 1866.
	Belding, L. A., *et al.* (*See* Leonard, John B. H., assignor.)			
58,202	Belfield, T. B	Philadelphia, Pa	Radiator, steam	Sept. 25, 1866.
52,015	Belknap, F. G	Washoe, Nevada	Grinding and amalgamating machines, shoes and dies for	Jan. 16, 1866.
58,759	Bell, Alonzo	Washington, D. C	Whiffletrees	Oct. 16, 1866.
58,017	Bell, C. S., assignor to self and Joseph K. Marley	Hillsboro', Ohio	Steam generators	Sept. 11, 1866.
54,489	Bell, Edwin	St. Paul, Minn	Rivers, method of removing sand bars from	May 8, 1866.
56,883	Bell, John	Lancaster, N. Y	Stave-cutting machines	Aug. 7, 1866.
57,072	Bell, John A	Lacon, Ill	Pockets, safety	Aug. 14, 1866.
57,465	Bell, J. C	Pawnee City, Neb. Ter	Sugar cane, method of treating	Aug. 28, 1866.
57,664	Bell, J. Harrod	Carmichael's, Pa	Well-boring shafts, coupling joints for	Sept. 4, 1866.
52,259	Bell, Martin	Sabbath Rest, Pa	Water wheels	Jan. 30, 1866.
54,097	Bell, Thomas	New York, N. Y	Medicine for the cure of consumption, &c	Apr. 24, 1866.
	Bell, William. (*See* Fell, Thomas M. and Ambrose G., assignors.)			
	Same.			
	Same.			
2,256	Bell, William S., jr	Boston, Mass	Collar, paper (Design)	Jan. 30, 1866.
2,288	Same	....do	Cuff and collar, paper (Design)	Apr. 3, 1866.
55,229	Bellairs, William, and Oliver D. Barto	Atkinson, Ill	Hook, snap	June 5, 1866.
2,332	Bellamy, John H	Charlestown, Mass	Brackets (Design)	June 12, 1866.
2,523	Same	....do	Picture frame (Design)	Dec. 11, 1866.
2,524	Same	....do	Bracket (Design)	Dec. 11, 1866.
2,296	Bellamy, John H., assignor to self, C. W. Stout, and Benj. Brown	....do	Picture frame (Design)	May 1, 1866.
2,364	Bellamy, John H., assignor to David A. Titcomb of half interest	....do	Bracket (Design)	July 24, 1866.
2,428	Same	....do	Picture frame (Design)	Sept. 25, 1866.
2,429	Same	....do	Picture frame (Design)	Sept. 25, 1866.
2,472	Bellamy, John H., assignor to self and D. A. Titcomb	....do	Bracket (Design)	Oct. 2, 1866
60,123	Bellerjean, John	Philadelphia, Pa	Lanterns	Dec. 4, 1866.
2,366	Bellinger, Elizabeth	Mohawk, N. Y	Fire, composition for kindling (Reissue)	Aug. 7, 1866.
58,978	Bellows, C. C	New Ipswich, N. H	Leather, creasing, slicking, and skiving	Oct. 23, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
60,124	Belton, Thomas E	Buffalo, N. Y	Steam-generator heaters	Dec. 4, 1866.
	Bemis & Call Hardware and Tool Company. (*See* Call, Amos, ass'r.)			
60,125	Bemis, Charles C	San Francisco, Cal	Grate bar for furnaces	Dec. 4, 1866.
52,516	Bemis, Sumner A	Springfield, Mass	Collars, shirt	Feb. 13, 1866.
55,807	Bemis, William A	Spencer, Mass	Grater and egg beater	June 26, 1866.
52,260	Bench, George and William	Auburn, N. Y	Wagons, lumber, reach for	Jan. 30, 1866.
53,371	Bench, William, assignor to self and George Bench	do	Vehicles, attaching seats to the beds of	Mar. 20, 1866.
57,434	Bender, John J., assignor to self, H. I. Bang, and G. Muller	New York, N. Y	Pianos, double-action	Aug. 21, 1866.
53,102	Bendix, H., and J. H. Fleisch, assignors to H. Bendix	do	Neck-ties	Mar. 13, 1866.
54,098	Benedict, Cyrus, jr	Omro, Wis	Sirup, cough	Apr. 24, 1866.
59,756	Benedict, Daniel D. T	Havanna, N. Y	Medical compound	Nov. 20, 1866.
53,394	Benedict, Julius S	Bedford, Ohio	Gates, fence	Mar. 27, 1866.
58,369	Same	do	Gates, fence	Oct. 2, 1866.
52,378	Benham, James I	New London, Conn	Cloth-measuring machine	Feb. 6, 1866.
58,203	Benjamin, Christopher S	Kalamazoo, Mich	Wood, composition for filling the pores of	Sept. 25, 1866.
60,465	Benjamin, G. and G. T., and H. S. Weston	Millersburg, Ohio	Car, railway	Dec. 18, 1866.
55,046	Bennett, Anthony A	Norwalk, Conn	Carding engines, means for operating the doffer combs of	May 29, 1866.
59,546	Bennett, Benjamin F	Lockport, N. Y	Bed bottom, spring	Nov. 13, 1866.
52,379	Bennett, Edwin	Philadelphia, Pa	Jars, fruit	Feb. 6, 1866.
55,988	Same	do	Glass bottles, implement for grooving the mouth of	July 3, 1866.
	Bennett, E. C., *et al.* (*See* Severance, James F., assignor.)			
53,104	Bennett, John F	Pittsburg, Pa	Heat by combustion of fuel of various kinds, mode of raising	Mar. 13, 1866.
59,166	Bennett, Joseph B	South Brooklyn, N. Y	Engines, steam, rotary	Oct. 30, 1866.
	Bennett, S. F., *et al.* (*See* Kellogg, E. C. C., assignor.)			
	Same.			
51,791	Bennett, Sylvester	Hartford, Conn	Broom	Jan. 2, 1866.
	Bennett, Wm., and Rufus S. Sanborn. (*See* Sanborn & Bennett.)			
58,204	Benoit, Charles P	Detroit, Mich	Piston-rod packing	Sept. 25, 1866.
58,977	Same	do	Mills, grinding	Oct. 23, 1866.
	Benson, David P. (*See* Frank, Theodore F., assignor.)			
58,579	Benson, James	Bell Air, Ohio	Pumps, sand	Oct. 9, 1866.
58,761	Bent, James M	Wayland, Mass	Leather, creasing or ornamenting	Oct. 16, 1866.
58,762	Same	do	Leather, punching	Oct. 16, 1866.
55,808	Bentz, Jacob	Brooklyn, N. Y	Matches, machine for framing	June 26, 1866.
58,763	Benz, Jacob	Philadelphia, Pa	Pianos, sound-boards for	Oct. 16, 1866.
57,665	Benzinger, Joseph C	Catonsville, Md	Catamenial sacks	Sept. 4, 1866.
59,813	Bequeret, D., and E. Dumoulin	Jamestown, Ill	Ploughs, gang	Nov. 20, 1866.
52,818	Berdan, Hiram	New York, N. Y	Cartridges, metallic	Feb. 27, 1866.
51,991	Berdan, Hiram, assignor to Berdan Fire-arms Manufacturing Co	do	Fire-arms, breech-loading	Jan. 9, 1866.
52,925	Same	do	Fire-arms, breech-loading	Feb. 27, 1866.
53,388	Same	do	Cartridges, metallic priming	Mar. 20, 1866.
58,764	Berg, Hermann, and Andrew Blessing	Springfield, Mass	Burners, gas	Oct. 16, 1866.
57,619	Bergen, Jacob, assignor to self and Peter Kaufman	Plain Township, Ohio	Cultivators	Aug. 28, 1866.
2,245	Berger, Henry	New York, N. Y	Composition in alto relievo (Design)	Jan. 30, 1866.
2,430	Same	do	Centre-piece (Design)	Sept. 25, 1866.

55,989	Bergmann, William	Philadelphia, Pa	Car coupling	July 3, 1866.
55,230	Berkely, William N	Cedar Rapids, Iowa	Bridges, method of turning	June 5, 1866.
55,231	Same	do	Bridges, method of turning	June 5, 1866.
56,164	Same	do	Tool for adjusting lathes to turn tapering shafts	July 10, 1866.
	Berlin, Henry C., and George H. Jones. (*See* Waymouth, Thomas V., assignor.) Reissue.			
58,960	Berlioz, August P	France	Electro-magnetic engines	Oct. 16, 1866.
	Berning, John B. (*See* Fischer, Francis J., assignor.)			
55,990	Beruy, Alois	Williamsburg, N. Y	Cradle and chair	July 3, 1866.
	Berrett, R., *et al.* (*See* Merriman & Ross, assignors.)			
	Berry, C. H. (*See* Green, Isaac T., assignor.)			
54,490	Berry, Henry, Hugo Hochholzer, and Frank Denver	Virginia City, Nevada	Hoisting purposes in mines, cages for	May 8, 1866.
2,305	Berthold, Pierre A., and Macklot Thompson	St. Louis, Mo	Trade-mark (Design)	May 8, 1866.
54,099	Bertrand, Theophilus F., and Peter Samcs	Rockford, Ill	Cultivators	Apr. 24, 1866.
57,245	Beselike, William, assignor to self, P. H. Vander Weyde, and L. Straus.	Philadelphia, Pa	Light and heat, method of using explosive liquids for the production of.	Aug. 14, 1866.
53,396	Best, Benjamin	Dayton, Ohio	Filter	Mar. 27, 1866.
53,401	Best, William	Newark, N. J	Hats, machines for ironing	Mar. 27, 1866.
53,518	Best, William, and Mahlon S. Drake, assignors to William Best	do	Hats, machines for ironing	Mar. 27, 1866.
51,913	Be teley, Albert	Boston, Mass	Peat, tank for preparing	Jan. 9, 1866.
57,073	Bettis, John S	Hanover, N. Y	Fence, farm	Aug. 14, 1866.
56,884	Betts, Albert C	Troy, N. Y	Fences, wire, tools for holding and driving staples for	Aug. 7, 1866.
59,705	Betts, Lewis F., assignor to self and L. G. Huntington	New York, N. Y	Lanterns	Nov. 13, 1866.
	Betts, W. L., and W. E. Morrison. (*See* Morrison & Betts.)			
55,991	Bever, John T	Bethel, Ill	Clothes tougs	July 3, 1866.
60,613	Bevin, Abner G	Chatham, Conn	Bells, sleigh	Dec. 18, 1866.
58,580	Bevin, Isaac A	do	Bell, gong	Oct. 9, 1866.
52,127	Bevitt, George	Madison, Wis	Mills, sugar	Jan. 23, 1866.
52,128	Same	do	Billiard cue	Jan. 23, 1866.
	Bickford, John C., and Francis D. Hayward. (*See* Hayward & Bickford.) Reissue.			
	Same.			
	Same.			
60,126	Bicknell, William	Hartford, Maine	Motion, communicating	Dec. 4, 1866.
57,074	Bidwell, G. W	New Haven, Conn	Hat protectors	Aug. 14, 1866.
52,016	Bidwell, H. M	do	Carriages, bow-irons for	Jan. 16, 1866.
51,914	Bieler, George B	Cincinnati, Ohio	Medical compound	Jan. 9, 1866.
	Bigelow, Asa, jr. (*See* Winkley, Swain, assignor.)			
59,167	Bigelow, D. J	Bane Centre, N. Y	Sleighs	Oct. 30, 1866.
54,282	Bigelow, Edmund	Springfield, Mass	Faucets, measuring	May 1, 1866.
58,205	Same	do	Sirup stand and soda fountain	Sept. 25, 1866.
2,406	Same	do	Sirup in soda water, apparatus for supplying and measuring. (Reissue.)	Dec. 4, 1866.
	Bigelow, Edwin A. (*See* Werner, Cassius M., assignor.)			
	Same.			
55,411	Bigelow, E. B, and Charles H. Waters, assignors to Clinton Wire Cloth Company	Boston, Mass; Groton, Mass	Sieves, wire, machinery for making	June 5, 1866.
52,517	Bigelow, George A	New Braintree, Mass	Sails, fore and aft, apparatus for reefing	Feb. 13, 1866.
	Bigelow, H. B., *et al.* (*See* Goodsell & Frisbie, assignors.)			
	Bigelow, H. B., and Daniel P. Calhoun. (*See* Kellogg, Henry, assignor.)			
56,165	Bigelow, H. B., and George Murray	New Haven, Conn; Cambridgeport, Mass	Blowers	July 10, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Bigelow, J. A., and R. L. Bryan. (*See* Bryan & Bigelow.)			
53,944	Biggs, Henry C., and Andrew C. Flinn	Lancaster, Pa.	Hydrants	Apr. 17, 1866.
60,127	Billings, Benjamin	Lyons, Iowa	Fence	Dec. 4, 1866.
54,100	Billings, Charles E	Windsor, Vt.	Fire-arm, breech-loading	Apr. 24, 1866.
56,885	Same	do	Pistol frames, dies for swaging	Aug. 7, 1866.
53,260	Billings, Jerome	Brighton, Mass	Culinary cabinet	Mar. 20, 1866.
54,999	Billings, Orson, assignor to self, R. H., and H. Penfield	Lagrange, Ohio	Planters, corn, hand	May 22, 1866.
	Billingsley, G. E. (*See* Monfort, John, assignor.)			
56,665	Binder, C. F., assignor to self and J. Binder	Philadelphia, Pa.	Glue, liquid	July 24, 1866.
59,168	Binder, Frederick	Baltimore, Md.	Pruning shears	Oct. 30, 1866.
58,207	Bing, James	Philadelphia, Pa.	Car brakes, shoe for	Sept. 25, 1866.
55,605	Bingham, Alanson	Sherry, N. H.	Chair seat	June 19, 1866.
54,053	Bingham, Alanson, and Osmore, A., assignors to selves and Daniel W. Willoby	Keene, N. H. / Gardner, Mass.	Chairs, construction of	Apr. 17, 1866.
58,051	Bingham, Edward B	Newark, N. J.	Paper-making machinery	Sept. 18, 1866.
60,128	Bingham, G. E	Milwaukee, Wis	Flue cleaner, revolving	Dec. 4, 1866.
57,849	Bingham, Leander K	New York, N. Y.	Composition for printers' rollers. (Antedated Sept. 5, 1866)	Sept. 11, 1866.
59,169	Bingham, T. F	Gowanda, N. Y.	Beehives	Oct. 30, 1866.
59,170	Same	do	Beehives	Oct. 30, 1866.
59,757	Bioren, C. W., assignor to Lysander Flagg	Philadelphia, Pa.	Tool handle	Nov. 20, 1866.
	Birch, James H., and Elmer Crawford. (*See* Crawford & Birch.)			
54,491	Birchard, J. F	Milwaukee, Wis.	Air in carburetting machines, apparatus for forcing	May 8, 1866.
55,606	Same	do	Tables, extension slides for	June 19, 1866.
	Bird, Dell, and Eli Keith. (*See* Keith & Bird.)			
60,329	Bird, James	New York, N. Y.	Pulleys, chain, cast-iron	Dec. 11, 1866.
54,492	Birdsall, Charles	Jersey City, N. J.	Sirup, compound	May 8, 1866.
54,842	Birdsall, Francis M.	Martinsville, Ohio	Furrowing machine. (Antedated May 16, 1866)	May 22, 1866.
53,396	Birkinbine, Henry P. M.	Philadelphia, Pa.	Pumps, valves for	Mar. 27, 1866.
	Birmingham, J., and C. Callaghan. (*See* Fogerty, Valentine, assignor.)			
57,075	Bisbee, B.	East Pharsalia, N. Y.	Washing machine	Aug. 14, 1866.
57,466	Bishop, George W.	Stamford, Conn.	Drills, ratchet	Aug. 28, 1866.
58,765	Same	do	Pulleys, friction-clutch	Oct. 16, 1866.
53,261	Bishop, Hiram	Batavia, Iowa.	Harvesters, pitman couplings for	Mar. 20, 1866.
59,344	Bishop, J. W.	New Haven, Conn.	Screws, capping	Nov. 6, 1866.
52,661	Bishop, Luman	Cortlandville, N. Y.	Cream, paste, &c., press and strainer for	Feb. 20, 1866.
2,281	Bishop, Luman, assignor to self and Stephen Brewer	Cortlandville, N. Y.	Paints and other materials, apparatus for straining. (Reissue)	June 12, 1866.
52,017	Bishop, Major E.	Southboro', Mass.	Spike extractor	Jan. 16, 1866.
54,673	Bishop, Marshall M.	Le Roy, N. Y.	Saw-mills	May 15, 1866.
52,953	Bishop, Martin	Lafayette, Ind.	Mills, paint and drug	Mar. 6, 1866.
54,101	Bishop, Peter S.	Attleborough, Mass.	Chain links, machinery for stamping	Apr. 24, 1866.
55,992	Bishop, William R.	Sherwood, Wis.	Gibs for cross-heads	July 3, 1866.
59,171	Bissell, Amos A.	Lockport, N. Y.	Boats, canal, decks for	Oct. 30, 1866.
54,843	Bitner, Eli S.	Lock Haven, Pa.	Fastenings, sash	May 22, 1866.
	Bixby, F. N. (*See* Wybell, J. C., assignor.)			

55,993	Black, A. M	Auburn, Ill	Cultivators	July 3, 1866.
59,345	Black, D. A. T	Rays Hill, Pa	Sleighs	Nov. 13, 1866.
55,232	Black, Harvey	Lewisburg, Ohio	Flax, machine for scutching	June 5, 1866.
57,850	Black, Henry	Carrollton, Ill	Hoisting apparatus	Sept. 11, 1866.
	Black, James, and Robert E. Rogers. (*See* Rogers & Black.)			
59,758	Blackham, Job W	Brooklyn, N. Y	Hat bodies, machine for felting	Nov. 20, 1866.
51,915	Blackie, John	New York, N. Y	Rope machines	Jan. 9, 1866.
53,105	Same	....do	Tobacco, plug, machine for making	Mar. 13, 1866.
56,886	Same	....do	Telegraph, electric	Aug. 7, 1866.
57,280	Same	....do	Tobacco, machine for pressing	Aug. 21, 1866.
	Blackie, Stephen (*See* Hodgins, S., assignor.)			
58,208	Blackman, W. H., and E. R. Carpenter	Clermont, Iowa	Water wheels	Sept. 25, 1866.
	Blackwell, J. M., *et al.* (*See* Krom, Stephen R., assignor.)			
	Same.			
	Blair, H. H., and S. E. Lanphear. (*See* Lanphear & Blair.)			
59,547	Blair, John	St. Louis, Mo	Poker and tongs, combined	Nov. 13, 1866.
60,129	Blair, J. B	Philadelphia, Pa	Cameras, solar	Dec. 4, 1866.
55,607	Blair, W. W	Lebanon, Tenn	Cultivators, cotton	June 19, 1866.
55,233	Blake, Amos S	Waterbury, Conn	Cartridges, metallic	June 5, 1866.
59,172	Same	....do	Pulleys	Oct. 30, 1866.
59,949	Blake, Charles A	Philadelphia, Pa	Alarm, burglar	Nov. 27, 1866.
57,076	Blake, Edward S	Pittsburg, Pa	Rack, hat, and seat	Aug. 14, 1866.
59,173	Same	....do	Stovepipe drum	Oct 30, 1866.
2,145	Blake, Eli W	New Haven, Conn	Stone breakers (Reissue)	Jan. 9, 1866.
2,414	Blake, George F., assignor to self and P. Hubbell	Boston, Mass	Clay, machine for pulverizing (Reissue)	Dec. 11, 1866.
52,241	Blake, Henry D., assignor to P. and F. Corbin	New Britain, Conn	Faucets, molasses	Jan. 23, 1866.
56,694	Blake, Richard C	Cincinnati, Ohio	Steam gauge	July 31, 1866.
59,346	Blake, William	Boston, Mass	Faucet, diaphragm	Nov. 6, 1866.
2,506	Blakeslee, Edwin, assignor to C. Cowles & Co	New Haven, Conn	Lamp, coach (Design)	Nov. 20, 1866.
55,608	Blakeslee, Erastus	Plymouth, Conn	Corset and skirt supporters	June 19, 1866.
57,077	Same	....do	Skirt, hoop, supporters	Aug. 14, 1866.
60,466	Same	....do	Soles, metal-plated	Dec. 18, 1866.
52,662	Blanchard, Allen M	St. Louis, Mo	Printers' chase	Feb. 20, 1866.
	Blanchard, Charles. (*See* Clark, H. M., assignor.)			
53,106	Blanchard, Virgil W	Bridgeport, Vt	Car brake	Mar. 13, 1866.
	Blandy, H., and F. J. S. (*See* Leffingwells, C., assignor.)			
52,518	Blasse, Alfred Robert	Westminster, Md	Egg beater	Feb. 13, 1866.
54,493	Blayney, James	Lowell, Iowa	Spinning machines, hand vertical	May 8, 1866.
	Blessing, Andrew, and Hermann Berg. (*See* Berg & Blessing.)			
56,140	Blessing, William, assignor to self and Horatio Maynard	Jeffersonville, Ohio	Seed cotton for planting, method of preparing	July 3, 1866.
53,262	Bleyley, A. T	Ottumwa, Iowa	Vegetable cutter	Mar. 20, 1866.
57,078	Blinn, Asa S., and D. W. Hewitt	Dubuque, Iowa	Clamps, flooring	Aug. 14, 1866.
52,018	Blinn, Charles D	Port Huron, Mich	Shade, window	Jan. 16, 1866.
	Bliss, J. W. (*See* McClay, John, assignor.)			
	Bliss, Jeremy W. (*See* Perry & Gladding, assignors.)			
54,674	Bliss, Marshall	Grinnell, Iowa	Mosquito canopy	May 15, 1866.
57,281	Blocher, George D	Indianapolis, Ind	Cooler	Aug. 21, 1866.
60,467	Blodgett, C. C	Watertown, N. Y	Hay forks, horse	Dec. 18, 1866.
55,809	Blodgett, John W	Plymouth, Ind	Stump extractor	June 26, 1866.
	Blocker, Samuel, sr., and John Stone. (*See* Stone & Blocker.)			
56,351	Blanquist, A., and C. Crook	New York, N. Y / Yonkers, N. Y	Marine car	July 17, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,992	Blood, A. E., and J. D., assignors to selves and E. D. Goodrich	Lynn, Mass	Sifter, flour	Jan. 9, 1866.
	Blood, Edwin. (*See* Wright, Wilbur F., assignor.)			
52,019	Bloom, Joseph Alexander	Philadelphia, Pa	Pumps for deep wells	Jan. 16, 1866.
	Blossom, Joseph R., and Frederick K. (*See* Darlington, J. H., assignor.)			
57,666	Bly, Douglas	New York, N. Y	Legs, artificial	Sept. 4, 1866.
	Blymyer, Bates & Day. (*See* Mercer, Charles & David, assignors.)			
56,887	Blythe, J. C	Perry, N. Y	Bolts, flour	Aug. 7, 1866.
	Boalt, Giles, *et al.* (*See* Smith, Addison, assignor.)			
2,183	Boardman, Byron	Norwich, Conn	Staples, wire (Reissue)	Mar. 6, 1866.
54,283	Same	do	Staples	May 1, 1866.
56,166	Same	do	Tool	July 10, 1866.
	Boardman, S. R., and M. H. Wheeler. (*See* Wheeler, John W., assignor.)			
56,352	Boardman, Silas R	New York, N. Y	Water drawers	July 17, 1866.
60,130	Boardman, William T. A	New Haven, Conn	Lamps, wick inserter for	Dec. 4, 1866.
55,994	Bocking, Richard C	Indianapolis, Ind	Gas purifier	July 3, 1866.
55,234	Bode, Gustavus	Milwaukie, Wis	Medical compound	June 5, 1866.
58,052	Bodge, John S	La Porte, Ind	Separator, grain	Sept. 18, 1866.
52,261	Bodine, Horatio R	Falls Township, Ohio	Pottery ware, machine for making	Jan. 30, 1866.
59,759	Bodine, John C., assignor to self and J. Vickers	Camden, N. J	Churns	Nov. 20, 1866.
	Bodine, T. and J. (*See* Borden, Joseph, assignor.)			
54,844	Bodwell, H. E., jr	Paterson, N. J	Sewing machine guide for stitching hat tips to the side linings	May 22, 1866.
52,020	Boeger, Frederick	Philadelphia, Pa	Bedstead, sofa	Jan. 16, 1866.
59,347	Boehmer, Christian	Madison, Wis	Cock-eye	Nov. 13, 1866.
	Boeklen, R., *et al.* (*See* Weston, Buchner & Boeklen.)			
57,037	Bogardus, John F., assignor to self, Jos. Anderson, and Thomas K. Schermerhorn.	Brooklyn, N. Y	Engines, steam, packing rings for pistons of	Aug. 7, 1866.
57,620	Same	do	Shafts, apparatus for turning	Aug. 28, 1866.
	Bogert, Horatio. (*See* Bradford, Hezekiah, assignor.)			
	Bogia, M. C., and H. B. Taylor	Philadelphia, Pa	Plaster	July 17, 1866.
56,353	Boggs, Joseph	Harrisburg, Pa	Brush	May 1, 1866.
54,284	Bohannan, Wilsen	New York, N. Y	Locks	May 29, 1866.
55,047	Bohannan, Wilsen, and Frank J. Johnson	do	Locks	May 29, 1866.
55,048	Boisset, Pierre. (*See* Bourquard, Eugene, assignor.)			
	Boissonneau, Auguste	France	Eyes, artificial	June 19, 1866.
55,793	Boldt, George	Chicago, Ill	Composition, fulminating	July 10, 1866.
56,167	Bollerman, D. L., and G. Kammerl. (*See* Kammerl & Bollerman.)			
	Bolles, J. N., and George W. Lane. (*See* Lane & Bolles.)			
57,667	Bollinger, Cornelius	Harrisburg, Pa	Mills, grinding	Sept. 4, 1866.
	Bollman, Wendel	Baltimore, Md	Bridges, construction of (Extension)	Jan. 5, 1866.
58,562	Bolton, F. J	England	Telegraphs, electric, signal codes for	Oct. 2, 1866.
	Bombail, Louis, and Louis G. Sourzac. (*See* Sourzac & Bombail.)			

2,473	Bond, Joseph, jr., assignor to Lathrop Sewing Machine Company.	Newark, N. J	Sewing machine (Design)	Oct. 2, 1866.
2,474	Same	....do	Sewing machine, frame of a (Design)	Oct. 2, 1866.
55,519	Bond, N. O	Hyannis, Mass	Stoves or ranges, cooking, brazier for	Feb. 13, 1866.
57,468	Bond, William F	Philadelphia, Pa	Rubber, artificial	Aug. 28, 1866.
54,494	Bonham, Thomas H	Elizabethtown, Ohio	Fountains, portable	May 8, 1866.
55,995	Bonnell, John F	Columbia, Cal	Quartz mills	July 3, 1866.
56,888	Bonnett. Gustav	New York, N. Y	Horseshoes	Aug. 7, 1866.
53,263	Boon, Alonzo T	Galesburg, Ill	Gates	Mar. 20, 1866.
53,559	Same	....do	Ploughs	Apr. 3, 1866.
53,775	Boon, Alonzo T., assignor to self and J. Scott Richmond	....do	Boats, floats for	Apr. 10, 1866.
51,792	Boon, John I	West Milton, Ohio	Dryer, fruit	Jan. 2, 1866.
57,668	Boosinger, J. W	Marine, Ill	Cultivators	Sept. 4, 1866.
54,675	Booth, James	St. Louis, Mo	Bale, cotton, tie	May 15, 1866.
57,467	Booth, J. L	Rochester, N. Y	Railroad rails	Aug. 28, 1866.
52,954	Borchardt, Frederick	Washington, D. C	Boots, mode of lacing	Mar. 6, 1866.
2,226	Borden, Gail	South East, N. Y	Milk, condensing (Reissue)	Apr. 17, 1866.
60,468	Borden, Joseph, assignor to F. and J. Bodine	Bridgeton, N. J	Jar, fruit	Dec. 18, 1866.
	Borie & Mackie. (*See* Mackie, Alexander, assignor.)			
	Borie, C., and B. Hoopes. (*See* Millers & Carver, assignors)			
58,053	Borris, P. J	Boston, Mass	Skirt elevators	Sept. 18, 1866.
56,168	Born, Peter	New York, N. Y	Bag, carpet, frames. (Antedated June 29, 1866)	July 10, 1866.
59,950	Borthwick, John	Philadelphia, Pa	Saws, machine for sharpening	Nov. 27, 1866.
	Borthwick, John, and Jessie Conver. (*See* Conver & Borthwick.)			
52,520	Boshert, Frederick	New York, N. Y	Stove-pipe elbows, and dies for producing the same	Feb. 13, 1866.
	Boston and Maine Foundry Company. (*See* Mingay, Edw., ass'r.)			
54,676	Boswell, Edward H	Philadelphia, Pa	Paper tins	May 15, 1866.
54,677	Same	....do	Stair rod and fastening	May 15, 1866.
57,669	Boswell, John K	Richmond, Ind	House, dry	Sept. 4, 1866.
60,469	Bosworth, John H	Bath, Maine	Carpet stretcher	Dec. 18, 1866.
53,560	Boughton, John W	Appleton, Wis	Car coupling	Apr. 3, 1866.
60,131	Boughton, John W	Chicago, Ill	Garments, elastic straps for	Dec. 4, 1866.
56,504	Boulton, William, and Joseph Worthington, assignors to Malkin & Co.	England	Files, &c., method of manufacturing	July 17, 1866.
59,706	Bourdereaux, Pierre, assignor to Joseph Merwin and Edward R. Bray.	New York, N. Y	Fire-arms, breech-loading	Nov. 13, 1866.
52,380	Bourgeois, Charles	Buffalo, N. Y	Steam gauges	Feb. 6, 1866.
	Bourne, Theodore. (*See* Sampson, William S., assignor.)			
58,186	Bourquard, Eugene, assignor to self and Pierre Boisset	France	Teeth, instruments for cutting	Sept. 18, 1866.
	Bousfield, Edward T., and James Howard. (*See* Howard and Bousfield.)			
53,090	Bousignes, (called Bley,) Gustave	France	Bottles, &c., method of fastening corks in	Mar. 6, 1866.
58,370	Bouton, A. M	Newark, N. J	Composition for removing ink from type	Oct. 2, 1866.
56,335	Bowden, John	England	Bellows	July 10, 1866.
59,548	Bowe, James C	Urbana, Ohio	Awning	Nov. 13, 1866.
	Bowen, Asa C., and DeWitt C. Jewett. (*See* Jewett & Bowen.)			
54,845	Bower, B. P	Cleveland, Ohio	Hydrants	May 22, 1866.
57,648	Bower, George, and John Qualter	England	Engines, steam, pistons for	Aug. 28, 1866.
	Bowers, George A., and J. A. Carlisle. (*See* Carlisle & Bowers.)			
51,793	Bowers, Isaac W	Boston, Mass	Wood, bending	Jan. 2, 1866.
57,282	Bowers, Thomas	Zanesville, Ohio	Screws, wooden	Aug. 21, 1866.
52,663	Bowie, Samuel R	Portland, Maine	Sleds	Feb. 20, 1866.
52,021	Bowker, Nelson	New York, N. Y	Water-wheels	Jan. 16, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,522	Bowlesby, George W	Monroe, Mich	Telegraphs, ocean	Feb. 13, 1866.
59,549	Bowman, A. D	New York, N. Y	Ink, writing, compound for making	Nov. 13, 1866.
59,814	Bowman, Frank	Waltham, Mass	Stove cricket	Nov. 20, 1866.
54,678	Bowman, Thomas S	St. Louis, Mo	Keys	May 16, 1866.
54,078	Bowman, William	Scotland	Boiler feeders	Apr. 17, 1866.
	Bowyer, William H. (*See* Schreiner, Henry, assignor.)			
	Boxley, George, and D. H. Payne. (*See* Payne & Boxley.)			
52,374	Boyd, Amos H	Medway, Mass	Sewing machines. (Patented in England July 18, 1862)	Jan. 30, 1866.
53,264	Boyd, Josse C	Rushville, Ind	Ditching machine	Mar. 20, 1866.
58,581	Boyd, Jesse C	Milroy, Ind	Ploughs, shovel	Oct. 9, 1866.
	Boyd, Milton, and James Sangster. (*See* Sangster & Boyd.)			
	Boyd, R. H., and W. W. Grier. (*See* Grier & Boyd.)			
	Same.			Feb. 27, 1866.
52,819	Boyd, Thomas	Des Moines, Iowa	Harvester, corn	May 22, 1866.
55,000	Boyden, Alexander, assignor to Alfred Fales and Erastus P. Carpenter.	Foxborough, Mass	Hoes, rakes, &c., device for attaching handles to	Nov. 13, 1866.
59,707	Boyden, Seth, assignor to Henry H. Jaques	Newark, N. J	Hat blocking machines	Sept. 4, 1866.
57,670	Boyer, James A	Greensburg, Ind	Building refrigerator, for preserving fruit, &c	Mar. 6, 1866.
	Boyer, Jean P., and Jean B. Evrard. (*See* Evrand & Boyer.)			Apr. 10, 1866.
52,955	Boyer, Samuel	Charlestown, Mass	Windows	July 3, 1866.
53,776	Boyer, Theodoro F	Harrisburg, Pa	Brooms, clamp for	Oct. 2, 1866.
55,996	Boyers, Jacob	Orrville, Ohio	Churns	Jan. 23, 1866.
58,371	Boyes, M	Pocahontas, Ill	Medical compound for hog cholera	Feb. 20, 1866.
52,129	Boyle, Charles B	New York, N. Y	Photographic lenses, mode of combining	Nov. 27, 1866.
52,672	Same	do	Lenses. (Antedated February 16, 1866)	Feb. 6, 1866.
59,951	Boynton, Alfred, assignor to Ebenezer M. Boynton	Wright Township, Mich	Saws	May 1, 1866.
	Boynton, Alfred W. (*See* Marvin Sumner, assignor.)			Sept. 18, 1866.
52,381	Boynton, David B	Boston, Mass	Boot-blacking ottoman	Sept. 18, 1866.
54,285	Boynton, George W	Auburn, N. Y	Racks, sheep	Sept. 25, 1866.
58,054	Boynton, John F	Syracuse, N. Y	Gases used for illuminating and heating, liquids for carburetting and enriching.	Oct. 16, 1866.
58,055	Same	do	Gas machines and carburetters, safety apparatus for	Oct. 16, 1866.
58,209	Same	do	Gas, apparatus for carburetting	Nov. 6, 1866.
2,375	Same	do	Gas, apparatus for carburetting (Reissue)	Nov. 6, 1866.
2,376	Same	do	Gas, apparatus for carburetting (Reissue)	Mar. 6, 1866.
59,348	Same	do	Roofing, composition for	Mar. 13, 1866.
59,349	Same	do	Evaporating salt water, vat for	Mar. 13, 1866.
52,956	Boynton, Leander W	Hartford, Conn	Sugar, cube, machine for making	July 3, 1866.
53,107	Same	do	Skewers, machine for making	Oct. 9, 1866.
53,108	Same	do	Skewers, machine for pointing	Jan. 23, 1866.
55,997	Boynton, Nathaniel A	New York, N. Y	Stove, coal	Feb. 20, 1866.
58,582	Same	do	Stove, base-burning	Aug. 7, 1866.
52,130	Boynton, R. H	Oshkosh, Wis	Spoke machines	
52,674	Boynton, William	Auburn, N. Y	Churns	
56,889	Same	do	Barrels, tapping	

54,495	Brace, Horatio B., and William T. Swart	Canandaigua, N. Y.	Fluid, burning, for illumination, compound	May 8, 1866.
	Bracher, Thomas. (*See* Eaton, Ward, assignor.) Reissue.			
	Bradbury, Cotton C. (*See* Clapp, P. C., assignor.)			
56,666	Bradbury, Henry, assignor to Neal Wilcox & Co	Berlin, Conn	Hook, snap	July 24, 1866.
	Bradbury, J. (*See* Baeheller, William, assignor.)			
	Bradbury, Thomas C., and John Priestly. (*See* Priestly & Bradbury.)			
59,174	Braddoek, Joseph	Indianapolis, Ind	Varnish	Oct. 30, 1866.
53,214	Bradford, Chas. K., assignor to self, C. B. Sanderson and M. Terrill, jr.	Lynn, Mass	Carriages, propelling	Mar. 13, 1866.
57,469	Bradford, Hezekiah	New York, N. Y.	Peat, apparatus for drying	Aug. 28, 1866.
53,729	Bradford, Hezekiah, assignor to Horatio Bogert	do	Inkstands	Apr. 3, 1866.
2,284	Bradford, P., assignor to Sargent & Co	New Haven, Conn	Coffin handles (Design)	Mar. 27, 1866.
55,760	Same	do	Sausage stuffer	June 19, 1866.
57,851	Bradley, Everal	Clyde, N. Y	Harrows	Sept. 11, 1866.
56,890	Bradley, Isaac	Hartford, Conn	Fire-arms, breeching-loading	Aug. 7, 1866.
57,038	Bradley, Jeremy, assignor to self, W. Pashley, and S. B. Hewitt, jr.	Cedar Falls, Iowa	Exeavators	Aug. 7, 1866.
52,665	Bradley, J. W	New York, N. Y.	Skirt hoops	Feb. 20, 1866.
54,848	Bradley, Lowis and Milton	Springfiold, Mass	Croqueterie. (Antedated April 17, 1866)	May 22, 1866.
53,561	Bradley, Milton	do	Game, soeial. (Antedated Mareh 30, 1866)	Apr. 3, 1866.
54,496	Bradley, Thomas H	St. Louis, Mo	Skirt-lifters, ladies	May 8, 1866.
56,169	Bradley, Robert D	Preston, Md	Shovel and tongs	July 10, 1866.
55,998	Bradt, Joseph	Laporte, Ind	Beehives	July 3, 1866.
55,456	Bradt, Joseph and / James Hayes	Avon, N. Y. / Rochester, N. Y	Railroad switch. (Antedated March 6, 1866)	June 12, 1866.
59,815	Brady, R	New York, N. Y.	Heater for soldering irons	Nov. 20, 1866.
58,713	Bragg, W. N., assignor to self and William H. Trainham	Richmond, Va	Car seat, railway, adjustable	Oct. 9, 1866.
52,666	Brague, Stephen B	New York, N. Y.	Stamp, hand	Feb. 20, 1866.
52,667	Same	do	Sponge cup	Feb. 20, 1866.
52,668	Brague, Stephen B., and William S. Starr	do	Stamp, hand	Feb. 20, 1866.
55,235	Braidwood, James	Wilmington, Ill	Coffer-dam	June 5, 1866.
56,518	Samo	do	Dumping car	July 24, 1866.
52,669	Braillard, Franeis F	New York, N. Y.	Toilet cases, pocket	Feb. 20, 1866.
52,023	Brakeley, Joseph	Philadelphia, Pa	Petroleum, vessel for	Jan. 16, 1866.
53,562	Bramble, W. H	Decatur, Ill	Letter boxes. (Antedated Mareh 30, 1866)	Apr. 3, 1866.
59,350	Branagan, William	Burlington, Iowa	Lard boiler	Nov. 6, 1866.
59,952	Same	do	Steam generators	Nov. 27, 1866.
	Branch, J. W. and J. Crooks. (*See* Milligan, John F., assignor.)			
	Branch, Richard. (*See* Milligan, John F., assignor.)			
53,397	Braneh, W. W., jr	Madison, Ohio	Bevels, protracting	Mar. 27, 1866.
	Brand, Christopher C	Norwieh, Conn	Lanee, bomb, for killing whales (Extension)	June 13, 1866.
60,330	Brand, M., and C. P. Hoffmann	Chicago, Ill	Mash maehino	Dec. 11, 1866.
53,563	Brandeis, Leopold	Brooklyn, N. Y.	Bronze powder, manufacture of	Apr. 3, 1866.
53,398	Branson, James L	Cincinnati, Ohio	Looms, hand	Mar. 27, 1866.
56,354	Brant, William	Paris, Ill	Movement, mechanical	July 17, 1866.
	Brassington, J. D., and W. H. Burnap. (*See* Burnap & Brassington.)			
58,976	Bratt, M	Maysville, Ky	Churns	Oct. 23, 1866.
60,331	Bratt, W. W	Ottawa, Ill	Gates, fence	Dec. 11, 1866.
	Braun, Augustus, and Wm. Rudolph. (*See* Rudolph & Braun.) Same.			
53,265	Braun, John	Philadelphia, Pa	Looms	Mar. 20, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,286	Bray, Benjamin	Methuen, Mass	Fastener, sash	May 1, 1866.
	Bray, Edward R., and Joseph Merwin. (*See* Bourdereaux, Pierre, assignor.)			
	Bray, Mellen. (*See* Woodbury, William, assignor.)			
	Same.			
55,001	Bray, Mellen, assignor to self and William Woodbury	Newton, Mass	Boom jaws, guide for	May 22, 1866.
52,356	Bray, Mellen, and Joseph A. Talpey, assignors to William K. Lewis	Boston, Mass / Somerville, Mass	Pea-shelling machine	Jan. 30, 1866.
53,399	Brayton, George B	Boston, Mass	Steam generator	Mar. 27, 1866.
57,079	Same	do	Engines, steam, oil injector for. (Antedated July 30, 1866)	Aug. 14, 1866.
54,815	Brazelle, Benjamin, ass'r to self, H. P. Walker, and J. C. Brown	Nashville, Ill	Cradle, self-rocking	May 15, 1866.
	Bready, Joseph, and Charles C. Sheldrake. (*See* Sheldrake & Bready.)			
59,953	Brear, Abel	Saugatuck, Conn	Trapping wild fowl	Nov. 27, 1866.
52,131	Breckenridge, R. Moss	Meriden, Conn	Saws, hand	Jan. 23, 1866.
56,891	Same	West Meriden, Conn	Stove-pipe dampers	Aug. 7, 1866.
58,583	Bredt, Ernst	New York, N. Y	Garments, under, galloon trimmings for	Oct. 9, 1866.
58,584	Same	do	Garments, galloon trimmings for	Oct. 9, 1866.
53,400	Breed, D. C	Lyndonville, N. Y	Hubs, machines for boring	Mar. 27, 1866.
54,497	Breed, Henry A	Lyman, Mass	Quartz pulverizer	May 8, 1866.
54,462	Breinig, David E., assignor to self and A. C. Crondal	New York, N. Y	Cork and other materials, water-proofing	May 1, 1866.
58,589	Breitenstein, William	do	Looms, power, for weaving concave and convex substances	Oct. 9, 1866.
56,695	Broneman, John	Mount Joy, Pa	Fence, portable	July 31, 1866.
53,078	Bressler, John S., assignor to Anthony Ihms	Milwaukee, Wis	Beer, process for making	Mar. 6, 1866.
53,402	Brewer, Nelson W	Williamsport, Pa	Pin, wooden, machines	Mar. 27, 1866.
	Brewer, Stephen. (*See* Winter, William H., assignor.)			
	Brewer, Stephen. (*See* Bishop, Luman, assignor.) Reissue.			
	Brewer, Stephen. (*See* Darley, Joseph, assignor.)			
56,355	Brewer, S., and W. W. Winter	Cortlandville, N. Y	Well pipes or tubes	July 17, 1866.
	Brewer, Stephen, and Wm. W. Winter. (*See* Winter & Brewer.)			
	Brewster, James, *et al.* (*See* Fitzhugh, B. G., assignor.)			
60,132	Bridge, Lewis	York, Pa	Stove, heating	Dec. 4, 1866.
54,102	Bridge, Lewis, and G. W. Ruby	do	Stoves, heating	Apr. 24, 1866.
52,957	Bridge, Robert	Paterson, N. J	Barrels from bursting, safety plug to prevent	Mar. 6, 1866.
60,332	Bridgeman, Otis	Addison, N. Y	Planing machines	Dec. 11, 1866.
	Bridgeport Knitting Company. (*See* House, J. A. and H. A., ass'rs.)			
2,312	Bridges, Albert	New York, N. Y	Bracket (Design)	May 15, 1866.
55,457	Bridges, Alfred	Newton, Mass	Cars upon springs, mode of suspending	June 12, 1866.
54,846	Bridgman, J. C	London, Ohio	Churns	May 22, 1866.
	Brigg, William W., and Edwin Ritson. (*See* Ritson & Brigg.)			
56,170	Briggs, A. C	North Easton, N. Y	Hay forks, horse	July 10, 1866.
52,958	Briggs, Albert P	Taunton, Mass	Clamp for furnace men's use	Mar. 6, 1866.
2,342	Briggs, B. G., assignor to self and T. Hilton	Providence, R. I	Collars, paper (Design)	July 3, 1866.
2,343	Same	do	Collars, paper (Design)	July 3, 1866.
2,341	Same	do	Collars, paper	July 3, 1866.

2,356	Briggs, B. G., assignor to self, J. A. Hanley, and T. Hilton	Providence, R. I.	Cuffs, paper (Design)	July 17, 1866.
2,357	Same	do	Cuff, paper	July 17, 1866.
3,358	Same	do	Collars, paper	July 17, 1866.
52,670	Briggs, C. N	Philadelphia, Pa	Well-boring machinery	Feb. 20, 1866.
	Briggs, Francis H., and Rufus Rowell. (*See* Rowell & Briggs.)			
58,937	Briggs, George W., assignor to Oliver F. Winchester	New Haven, Conn	Fire-arms magazine	Oct. 16, 1866.
56,519	Briggs, Jesse	Stuyvesant, N. Y	Saws, clamps for holding	July 24, 1866.
56,356	Briggs, John	Roxbury, Mass	Starch, size, &c., apparatus for preparing	July 17, 1866.
60,614	Briggs, John, assignor to self and E. A. Holmes	Louisville, Ky	Tackle block	Dec. 18, 1866.
58,979	Briggs, Joshua	Peterboro', N. H	Stool, piano	Oct. 23, 1866.
55,049	Briggs, J. E	West Randolph, Vt	Washing machine	May 29, 1866.
52,266	Briggs, J. Smith	Chicago, Ill	Ores, apparatus for desulphurizing	Mar. 20, 1866.
59,889	Briggs, Walter	Green Castle, Iowa	Mill, cane	Nov. 20, 1866.
55,458	Brigham, Alden	Coldbrook, Mass	Dust range or receptacle	June 12, 1866.
56,520	Brigham, George N	Montpelier, Vt	Churns	July 24, 1866.
56,892	Brigham, S. O	San Francisco, Cal	Body conformators	Aug. 7, 1866.
55,459	Bringhurst, Jesse	Philadelphia, Pa	Legs, artificial	June 12, 1866.
52,022	Bring, Abram L	Warren, Ill	Sugar evaporators	Jan. 16, 1866.
55,999	Brinkley, T. E. C	Louisville, Ky	Ploughs	July 3, 1866.
60,333	Same	do	Tuyeres	Dec. 11, 1866.
	Brintnall, T., and A. Washburn. (*See* Washburn & Brintnall.)			
57,080	Brisbane, Albert	New York, N. Y	Roofing. (Antedated August 3, 1866)	Aug. 14, 1866.
	Brislin, John, and Jacob Shinneller. (*See* Shinneller & Brislin.)			
55,050	Bristol, Charles B	New Haven, Conn	Hook, snap	May 29, 1866.
59,890	Same	do	Hook and fastening for ropes	Nov. 20, 1866.
55,574	Bristol, Charles B., assignor to self and Philippe Koch	do	Bed-bottom, spring	June 12, 1866.
53,564	Bristol, L. C	Victor, N. Y	Drill cable meters	Apr. 3, 1866.
58,585	Bristol, L. C., and C. T. Alverson	do	Beehives	Oct. 9, 1866.
58,980	Bristol, Richard C	St. Clair, Mich	Engine, steam, slide valve	Oct. 23, 1866.
60,470	Same	do	Steam generators, water and steam separators for	Dec. 18, 1866.
2,507	Britner, George C., assignor to Harvey and Ford	Philadelphia, Pa	Tobacco pipe (Design)	Nov. 27, 1866.
57,852	Britten, Benjamin	Galena, Ill	Dams and sewers	Sept. 11, 1866.
	Britton, J., *et al.* (*See* Vanbebber, Sallee, and Britton.)			
56,171	Brizee, John	Alvarado, Cal	Motion, device for transmitting. (Antedated July 3, 1866)	July 10, 1866.
58,163	Broad, Lucy, assignor to Charles A. Broad	St. Louis, Mo	Disinfectant	Sept. 18, 1866.
	Broadbrooks, Peter. (*See* Walker, Richard, assignor.)			
59,351	Broadmeadow, J. P	New York, N. Y	Stove, cooking	Nov. 6, 1866.
55,609	Broadwell, L. W	New Orleans, La	Ordnance	June 19, 1866.
55,761	Broadwell, Lewis W., assignor to C. M. Clay	do	Projectiles for rifled ordnance, packing	June 19, 1866.
55,762	Same	do	Ordnance, breech-loading	June 19, 1866.
2,397	Brockway, Henry, assignor to Clark Tompkins	Troy, N. Y	Knitting machines, circular take-up for (Reissue)	Nov. 20, 1866.
58,586	Brockway, Nathaniel	Cambria, N. Y	Sawing machines	Oct. 9, 1866.
	Bromberg, Samuel. (*See* Moore, Marquis D., assignor.)			
	Bromley, Thomas. (*See* Jones, Richard, assignor.)			
58,056	Bronson, Austin	New York, N. Y	Squares, T	Sept. 18, 1866.
53,565	Bronson, P. K	East Avon, N. Y	Plough shares	Apr. 3, 1866.
	Same. (*See* Curtis, George B., assignor.)			
55,051	Brooker, Albert	Atalissa, Iowa	Fence, portable	May 29, 1866.
55,052	Brooks, Asa T., assignor to Russell & Erwin Manufacturing Co.	New Britain, Conn	Locks and latches, reversible	May 29, 1866.
	Brooks, Heman. (*See* Hopson, Manville & Brooks.)			
	Brooks, H. P., and O. L. Hopson. (*See* Manville, Eli J., assignor.)			
	Same.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,781	Brooks, Heman P., assignor to Turner & Clark Manufacturing Co.	Walcottville, Conn.	Nails, picture, &c., heads for	Feb. 20, 1866.
59,175	Brooks, Hugh, and James Ball	Zanesville, Ohio	Locomotives, smoke-stacks for	Oct. 30, 1866.
	Brooks, James C., and H. D. Niles. (*See* Niles & Brooks.)			
55,002	Brooks, John, assignor to self and Joseph Brooks.	North Bridgewater, Mass.	Welt trimmer	May 22, 1866.
52,960	Brooks, John W. Stephen F. Gates, and Charles Burleigh	Milton, Mass. Boston, Mass. Fitchburg, Mass	Drill, rock	Mar. 6, 1866.
2,313	Brooks, Joshua	Newton, Mass.	Card holders.....(Design.)	May 15, 1866.
59,120	Brooks, Peter, assignor to the National Line and Cord Company	New Haven, Conn.	Fishing lines and other small cords, machinery for making	Oct. 23, 1866.
59,352	Brooks, Rhodom M	Pike county, Ga.	Press, revolving screw, portable	Nov. 6, 1866.
	Brooks, Vincent (*See* Willis, William, assignor.)			
54,287	Brooks, W. P.	Fairmount, Minn.	Bag fasteners	May 1, 1866.
60,615	Brooks, Willard P., assignor to self and F. B. Crippen	....do	Broom head	Dec. 18, 1866.
53,403	Brooks, William R.	Boston, Mass	Wick trimmer	Mar. 27, 1866.
	Brophy, William. (*See* Milne, William B., assignor.)			
55,810	Brosius, John M.	Liberty, Iowa	Steam, utilizing	June 26, 1866.
	Brougher, D. J., *et al.* (*See* Hammer, George H., assignor.)			
	Brougher, D. J., *et al.* (*See* Middleton, Wm. A., assignor.)			
58,766	Broughton, James	Lambertsville, N. J.	Piston packing	Oct. 16, 1866.
52,521	Same	New York, N. Y.	Steam gauge cocks	Feb. 13, 1866.
52,959	Same	....do	Oilers	Mar. 6, 1866.
58,767	Broughton, John	....do	Engines, steam, lubricators for	Oct. 16, 1866.
55,460	Brouse, B. V. M.	Kokomo, Ind.	Locks	June 12, 1866.
52,132	Brower, Frank F., and George C. Campbell	Ottawa, Ill.	Ores, gold, silver, and copper, method of disintegrating and desulphurizing.	Jan. 23, 1866.
	Brown, Alanson. (*See* Fawcet, Samuel, assignor.)			
60,334	Brown, Albert	Troy, N. Y	Grates for stoves	Dec. 11, 1866.
	Brown, Amml. (*See* Willis, N. J., assignor.)			
56,172	Brown, A. P., assignor to L. W. Pond	Worcester, Mass	Lathes, feed-stop for	July 10, 1866.
	Brown, Benjamin, *et al.* (*See* Bellamy, John H., assignor.) Design.			
59,954	Brown, Benjamin F.	Portland, Maine	Coal hod and sifter, combined	Nov. 27, 1866.
54,847	Brown, C. F.	Warren, R. I.	Anchor	May 22, 1866.
53,519	Brown, Calvin M., assignor to David B. Turnbull	Aurora, Ill.	Bed bottom	Mar. 27, 1866.
56,357	Brown, Charles, and C. McGhie	Chicago, Ill.	Faucets, beer	July 17, 1866.
58,587	Brown, Charles F.	Ashly, Mass.	Valve, safety, tender	Oct. 9, 1866.
54,244	Brown, Charles K., and William Wright, assignors to Charles K. Brown.	Troy, N. Y	Collar, paper, machines	Apr. 24, 1866.
58,588	Brown, C. P.	Shortsville, N. Y.	Planters, seed	Oct. 9, 1866.
53,566	Brown, Charles W.	Newark, N. J.	Ladder, step	Apr. 3, 1866.
	Brown, Clark H. (*See* Palmer, Joel H., assignor.)			
	Brown, Conrad, and Thomas M. Kane. (*See* Kane & Brown.)			
59,353	Brown, Dunforth H.	Northfield, Vt.	Water wheel	Nov. 6, 1866.
51,794	Brown, D. C.	Lowell, Mass.	Loom harness	Jan. 2, 1866.
	Brown, David K. (*See* Lego, George B., assignor.)			

53,945	Brown, Edmund	Burlington, Vt	Lamps	Apr. 17, 1866.
58,981	Brown, Edmund	Chicago, Ill	Amalgamator	Oct. 23, 1866.
59,955	Same	....do	Gold and silver from ores, separating. (Antedated October 20, 1866.)	Nov. 27, 1866.
52,382	Brown, Edward	South Otselic, N. Y	Cord into a series of united skeins, machine for winding	Feb. 6, 1866.
52,262	Brown, Elias	Wappinger's Falls, N. Y	Combs	Jan. 30, 1866.
	Brown, E. Burrows. (*See* Clift, Horace, assignor.)			
52,820	Brown, E. R	Mauch Chunk, Pa	Railway brake	Feb. 27, 1866.
52,024	Brown, Felix	New York, N. Y	Engines, oscillating	Jan. 16, 1866.
55,575	Brown, Felix, assignor to A. & F. Brown & Co	....do	Engines, oscillating	June 12, 1866.
55,949	Brown, Franklin H., assignor to self and James F. Griffen	Chicago, Ill	Air, apparatus for carburetting	June 26, 1866.
55,950	Same	....do	Air, apparatus for carburetting	June 26, 1866.
55,811	Brown, Frederick H	....do	Planter, cotton-seed	June 26, 1866.
58,372	Same	Auburn, N. Y	Planter, cotton-seed	Oct. 2, 1866.
	Brown, H., and G. Smith. (*See* Smith & Brown.) Design.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
54,288	Brown, Harvey	Chalfant, Ohio	Water-wheels	May 1, 1866.
54,103	Brown, Henry H	Washington county, Pa	Presses, wool	Apr. 24, 1866.
55,236	Brown, Hiram	Cape Elizabeth, Maine	Sail	June 5, 1866.
56,000	Same	....do	Rakes, hay	July 3, 1866.
	Brown, I. C., *et al.* (*See* Brazelle, Benjamin, assignor.)			
	Brown, Israel F., and Albert Conant. (*See* Conant & Brown.)			
57,853	Brown, J. B	Medina, Wis	Rack, sheep and cattle	Sept. 11, 1866.
	Brown, James H., *et al.* (*See* Runk, Brown & Morgan.)			
57,854	Brown, James J	Madison, Wis	Thill coupling	Sept. 11, 1866.
53,916	Brown, John E., assignor to self, Charles A. Mott, and A. A. Peebles.	Lansingburg, N. Y	Collars, horse, hames for	Apr. 10, 1866.
51,795	Brown, John H	New York, N. Y	Baby walker and cradle. (Antedated December 28, 1865.)	Jan. 2, 1866.
51,916	Same	Watertown, N. Y	Horseshoe	Jan. 9, 1866.
56,358	Same	New York, N. Y	Sleds, toy	July 17, 1866.
60,335	Same	....do	Horse, propelling	Dec. 11, 1866.
60,336	Same	....do	Toy, spring	Dec. 11, 1866.
60,337	Same	....do	Boilers and other vessels, mode for attaching handles to	Dec. 11, 1866.
2,168	Brown, Jonathan C	Brooklyn, N. Y	Splints, machine for cutting (Reissue)	Feb. 13, 1866.
54,696	Brown, J. O., A. Ingham, and F. T. Lomont	Massillon, Ohio	Harvester rakes	July 31, 1866.
58,590	Brown, Julia P	Boston, Mass	Bedsteads to apartments, application of	Oct. 9, 1866.
59,956	Brown, J. R	Winchester, Ind	Sugar, centrifugal machines for draining	Nov. 27, 1866.
	Brown, J. R., and Sidney Maltby. (*See* Maltby & Brown.)			
	Brown, Joseph R., *et al.* (*See* Grant, Lewis F., assignor.)			
56,359	Brown, J. S	Washington, D. C	Hay forks, horse	July 17, 1866.
2,391	Same	....do	Hay forks, horse, division A (Reissue)	Nov. 6, 1866.
2,392	Same	....do	Hay forks, horse, division B (Reissue)	Nov. 6, 1866.
53,520	Brown, J. Warren, and Elinkin Rice, assignors to J. Warren Brown.	New York, N. Y	Books, pocket, clasps for	Mar. 27, 1866.
59,550	Brown, Levi		Cows while being milked, device for confining	Nov. 13, 1866.
52,671	Brown, Lorenzo W., and Isaac L. Frankem	Indianapolis, Ind	Furnace, hot-air	Feb. 20, 1866.
52,673	Brown, Morgan W	New York, N. Y	Gilding and ornamenting surfaces, process for	Feb. 20, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,796	Brown, Newton, and H. B. Gregg	Gratis, Ohio	Steam, device for superheating	Jan. 2, 1866.
54,246	Brown, N. B., assignor to self and Elbrige Sims	Antwerp, N. Y	Labricating carriage axles, device for	Apr. 24, 1866.
56,360	Brown, O. C	Iberia, Ohio	Clothes dryers	July 17, 1866.
56,893	Brown, Robert	Dayton, Ohio	Reaping and mowing machines	Aug. 7, 1866.
56,521	Brown, R. D	Covington, Ind	Harvester rakes	July 24, 1866.
52,636	Brown, Samuel, assignor to self and Leon Level	San Francisco, Cal	Block, disengaging hook	Feb. 13, 1866.
55,053	Brown, Samuel, and Leon Level	....do	Boats, ship's apparatus for lowering	May 29, 1866.
60,133	Same	New York, N. Y	Boats, apparatus for detaching	Dec. 4, 1866.
56,697	Brown, Thomas	Albany, N. Y	Car seats, redyeing the cushions of	July 31, 1866.
57,283	Brown, Thomas J	Clio, Ohio	Corn husker	Aug. 21, 1866.
51,993	Brown, Thomas L., assignor to George W. Foster	Cincinnati, Ohio	Shoe jacks	Jan. 9, 1866.
54,849	Brown, T. Stewart	Philadelphia, Pa	Locks, trunk	May 22, 1866.
54,245	Brown, Thomas S., assignor to self and John P. Adriance	Poughkeepsie, N. Y	Harvesters, &c., seats for	Apr. 24, 1866.
60,616	Same	....do	Machinery, self oiling and adjusting bearing for	Dec. 18, 1866.
56,361	Brown, Thomas W	New York, N. Y	Lamp bracket	July 17, 1866.
58,768	Same	....do	Journal box, grindstone	Oct. 16, 1866.
	Brown, Thomas W., and John H. Barnes. (*See* Barnes & Brown.)			
55,054	Brown, V. W., and D. Frankish	Camden, N. J Philadelphia, Pa	Lamp chimneys	May 29, 1866.
	Brown, William H. (*See* Wilson, Silas H., assignor.)			
56,894	Brown, William H	Cedar Falls, Iowa	Bag fasteners	Aug. 7, 1866.
56,895	Brown, William H	Stockwell, Ind	Fence	Aug. 7, 1866.
	Brown, William R., *et al.* (*See* Nelson, Charles, assignor.)			
	Brown, William S., and Lewis Hebard. (*See* Hebard & Brown.)			
58,332	Browne, Arthur W., assignor to self, J. L. and E. W. Moss	Brooklyn, N. Y	Buttons	Sept. 25, 1866.
55,461	Browne, John D	Cincinnati, Ohio	Centrifugal machine	June 12, 1866.
2,339	Browne, John D., assignor through mesne assignments to James F. Monroe.	Fitchburg, Mass	Apples, machine for paring (Reissue)	Aug. 21, 1866.
58,057	Brownwell, Benjamin	Chicago, Ill	Furnace, hot-air	Sept. 18, 1866.
	Brownell, H. T., *et al.* (*See* Lyons, James B., assignor.)			
	Same.			
53,778	Brownell, P. T	Elmira, N. Y	Umbrellas and canes, combined	Apr. 10, 1866.
	Brownell, W H. (*See* Arnall, William M., assignor.)			
58,210	Brownell, Thomas W., and P. C. Hard	Wadsworth, Ohio	Sewing machines, hemming guides for	Sept. 25, 1866.
55,812	Bruce, Duncan	Rossville, N. Y	Evaporating, &c., mode of constructing vacuum vessels for	June 26, 1866.
59,816	Bruce, E. H. and J. M	Welkins, Pa	Cans, fruit, apparatus for sealing	Nov. 20, 1866.
60,338	Bruce, George	Corydon, Ind	Carding engines, feeding devices for	Dec. 11, 1866.
60,134	Bruckner, William	San Francisco, Cal	Furnace for desulphurizing ores	Dec. 4, 1866.
58,769	Bruen, John H	Elmira, N. Y	Wells, method of sinking and tubing	Oct. 16, 1866.
55,813	Bruen, John T	New York, N. Y	Hammers for bending couplings	June 26, 1866.
59,957	Bruen, John T., and G. M. Jacobs, assignors to G. M. Jacobs	New York, N. Y	Button-holes, machines for cutting and reinforcing	Nov. 27, 1866.
	Bruen Manufacturing Company. (*See* Fuller, Henry William, assignor.)			
	Brumfield, Edwin, and Francis M. Smith. (*See* Smith & Brumfield.)			

	Bruner, Richard. (*See* Horrall, W. A., assignor.)			
	Brurien, F., *et al.* (*See* Anton, Gustav, assignor.)			
52,133	Brush, Alfred C	Darien, Conn	Fur, process for treating	Jan. 23, 1866.
58,591	Brush, Alfred C., and George C. White	....do	Dyeing hat bodies, &c	Oct. 9, 1866.
57,671	Brush, A. M	Clayton, N. Y	Organ reed	Sept. 4, 1866.
	Bryan, J., *et al.* (*See* Parker, Thomas J., assignor.)			
	Bryan, John A., *et al.* (*See* Krom, Stephen R., assignor.)			
	Same.			
52,357	Bryan, R. L., and J. A. Bigelow, assignors to selves and C. H. Everist.	Franklin, Mich	Cartridge boxes	Jan. 30, 1866.
57,289	Bryent, Walter	Boston, Mass	Drains, apparatus for suppressing effusions from	Aug. 21, 1866.
53,404	Brymer, T. H	New York, N. Y	Stoves, gas burner for	Mar. 27, 1866.
52,523	Bryson, James D	Petrolcum Centre, Pa	Wells, oil, tubing for	Feb. 13, 1866.
56,522	Bryson, Robert	Schenectady, N. Y	Reaping machines	July 24, 1866.
56,698	Same	....do	Harvesters	July 31, 1866.
57,855	Buch, Henry B	Litiz, Pa	Hubs, metallic	Sept. 11, 1866.
54,104	Buchanan, John	Aurora, Ind	Broom head	Apr. 24, 1866.
	Bucher, Gibbs & Co. (*See* Gibbs, Lewis, assignor.)			
	Buchner, F., *et al.* (*See* Weston, Buchner & Boeklen.)			
52,263	Buck, Henry	Harrisburg, Pa	Broom head	Jan. 30, 1866.
54,498	Same	....do	Broom head	May 8, 1866.
52,926	Bucklin, Edward, jr., assignor to self and Lysander Flagg, jr	Pawtucket, R. I	Files, machines for cutting	Feb. 27, 1866.
58,982	Bucklin, Edward, jr., and Sedgewick A. Sutton	North Providence, R. I	Screen, window	Oct. 23, 1866.
	Bucklin, S. S., *et al.* (*See* Gray, Joshua, assignor.)			
	Same. (Reissue.)			
52,134	Buckman, E. and A	East Greenbush, N. Y	Hay forks, horse	Jan. 23, 1866.
55,610	Bucknall, H	Darien, Wis	Washing machine	June 19, 1866.
57,856	Bucknall, M. H	....do	Cultivators	Sept. 11, 1866.
54,679	Bucknam, Frederick	Portland, Me	Scoop, sifter, grater, and holder	May 15, 1866.
51,797	Buckner, X. X	Boonville, Mo	Car brake, steam	Jan. 2, 1866.
56,362	Buckwalter, H. L. and J. A	Kimberton, Pa	Horse powers	July 17, 1866.
58,592	Same	....do	Faucets, measuring. (Antedated September 30, 1866)	Oct. 9, 1866.
54,850	Budenbach, Peter	New York, N. Y	Light head, for engines	May 22, 1866.
55,814	Budd, Henry and Samuel W	Philadelphia, Pa	Locks	June 26, 1866.
58,373	Budd, John T	New York, N. Y	Furnace, hot-air	Oct. 2, 1866.
53,777	Budlong, Jenks	Chardon, Ohio	Cheese, manufacture of	Apr. 10, 1866.
53,267	Buell, Franklin M	Truxton, N. Y	Wood, method of protecting	Mar. 20, 1866.
56,363	Same	....do	Roofing cement	July 17, 1866.
	Buell, George B. (*See* Hall, Thomas, assignor.)			
	Buell, John M., and Jacob Behel. (*See* Behel & Buell.)			
58,058	Buerk, J. E	Boston, Mass	Clocks, alarm	Sept. 18, 1866.
54,499	Buffington, N. M	Fall River, Mass	Printing, power, mode of preparing stone for. (Antedated April 30, 1866.)	May 8, 1866.
	Bugbee, George W., and Samuel G. Hall. (*See* Hall & Bugbee.)			
56,896	Buhle, N. A	New York, N. Y	Composition for grinding and polishing	Aug. 7, 1866.
52,524	Bulkley, Henry G	Kalamazoo, Mich	Kiln, drying	Feb. 13, 1866.
	Same	....do	Drying grain (Extension)	Feb. 21, 1866.
53,779	Bulkley, James F	Brooklyn, N. Y	Fuel, artificial. (Antedated March 30, 1866)	Apr. 10, 1866.
55,576	Bull, Daniel, assignor to self, C. D. Vaughan, and F. A. Gibbs	Amboy, Ill	Boxes, mitre	June 12, 1866.
52,674	Bull, Henry C	Louisville, Ky	Brick machine	Feb. 20, 1866.
59,333	Bullard, Franklin N	Worcester, Mass	Glass bottles, construction of	Oct. 30, 1866.
54,054	Bullard, John S., assignor to C. Bullard & Sons	Chagrin Falls, Ohio	Butter moulds	Apr. 17, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,611	Bullock, James	Readsboro', Vt	Sap bucket hooks	June 19, 1866.
56,173	Bullock, Robert	South Mills, N. C	Cultivators	July 10, 1866.
56,487	Bullock, Smith W., assignor to the Bullock Ore Dressing Machine Company.	Elizabeth, N. J	Quartz mills. (Antedated July 3, 1866)	July 17, 1866.
53,405	Bunce, James A	East Berlin, Conn	Lathe chucks	Mar. 27, 1866.
	Bunce, William, *et al.* (*See* Hill, Edwin H., assignor.)			
52,135	Bundel, Henry	Dayton, Ohio	Seeding machines	Jan. 23, 1866.
59,176	Bundy, Jonathan	West Liberty, Iowa	Fence	Oct. 30, 1866.
	Bunge, Charles, and Corydon Wheat. (*See* Wheat & Bunge.)			
	Bunnel, R. A. (*See* Spencer, Charles F., assignor.) Reissue.			
52,525	Bunnel, F. A	Syracuse, N. Y	Jars, fruit, covers for	Feb. 13, 1866.
58,018	Bunting, T. B., assignor to self and R. L. Delisser	New York, N. Y	Bale fastenings	Sept. 11, 1866.
53,268	Burbank, Abner	Rochester, N. Y	Bolts, flour, and bran dusters	Mar. 20, 1866.
55,462	Burbank, Daniel W	New York, N. Y	Bed bottom	June 12, 1866.
55,612	Burchard, John A	Beloit, Wis	Hoe and corn planter, combined	June 19, 1866.
53,109	Burchardt, Carl	New York, N. Y	Nozzles for fire engines	Mar. 13, 1866.
57,857	Burchell, R. B	Brooklyn, N. Y	Lock	Sept. 11, 1866.
2,420	Burchell, Richard B	do	Lock (Reissue)	Dec. 18, 1866.
54,105	Burchnall, Joseph, and J. T. Johnson	Kalamazoo, Mich	Refrigerator, milk and cream	Apr. 24, 1866.
59,354	Burdett, Riley	Chicago, Ill	Musical instruments, reed	Nov. 6, 1866.
59,958	Burdie, Charles W	Norwich, Conn	Tools, turning and planing	Nov. 27, 1866.
	Burdick, A. R., and H. A. Bailey. (*See* Bailey & Burdick.)			
52,927	Burdick, Orren H., assignor to self and David M. Osborne	Auburn, N. Y	Harvesters	Feb. 27, 1866.
53,780	Burdiet, Orrin C	New Haven, Conn	Nut machines, dies for	Apr. 10, 1866.
53,781	Same	do	Dies for punching	Apr. 10, 1866.
57,782	Same	do	Nut machines	Apr. 10, 1866.
51,994	Burditt, Riley, assignor to Jacob Estey & Co	Brattleboro', Vt	Musical instruments, reed	Jan. 9, 1866.
59,959	Burgess, J. F	Brooklyn, N. Y	Piano-forte covers, &c., ornamenting	Nov. 27, 1866.
55,463	Burgum, John	Concord, N. H	Meat under brine, device for keeping	June 12, 1866.
2,303	Burgy, E., and L. Guillemin, assignors to Wm. Kiefer	New York, N. Y	Threads, &c., machines for dressing and finishing (Reissue)	July 10, 1866.
56,523	Burk, Hiram	Mineral Point, Ohio	Clothes, washing rubber	July 24, 1866.
58,593	Burke, Andrew J	Grundy Centre, Iowa	Measuring grain, tally boxes for	Oct. 9, 1866.
54,680	Burke, John	Courtland, Ill	Fire-arms, breech-loading	May 15, 1866.
55,613	Burke, John	Sycamore, Ill	Fire-arms, breech-loading	June 19, 1866.
57,285	Burket, D. N., and J. C. Gray	Half Moon, Pa / Putneyville, Pa	Petroleum, apparatus for treating	Aug. 21, 1866.
52,264	Burkhart, William H	Bueyrus, Ohio	Harvesting machines	Jan. 30, 1866.
52,526	Same	do	Harvesters	Feb. 13, 1866.
52,961	Burleigh, Charles	Fitchburg, Mass	Drilling rocks, machines for	Mar. 6, 1866.
59,960	Same	do	Drilling machines, rock	Nov. 27, 1866.
	Burleigh, Charles, *et al.* (*See* Brooks, Gates & Burleigh.)			
57,081	Burlingame, A. H	Sparta, Ill	Ploughs, gang	Aug. 14, 1866.
	Burlington Manufacturing Company. (*See* Grant, Samuel A., assignor.)			
58,594	Burnap, W. H., and J. D. Brassington	New York, N. Y	Telegraph insulators	Oct. 9, 1866.

52,527	Burnett, Benajah J	Mount Vernon, N. Y	Ventilator	Feb. 13, 1866.
52,528	Same	do	Ventilating houses, &c., system of	Feb. 13, 1866.
53,406	Same	do	Hats, ventilators for	Mar. 27, 1866.
52,383	Burnett, Benjamin F., and Thomas Vandewort	Phelps, N. Y	Wind wheels	Feb. 6, 1866.
54,851	Burnett, M., and H. Comstock	Boston, Mass	Valves, steam	May 22, 1866.
60,617	Burnett, Walter D	Newark, N. J	Anvil on which to rivet trunks	Dec. 18, 1866.
59,121	Burnett, William, assignor to John C. Paige	San Francisco, Cal	Valves, safety	Oct. 23, 1866.
54,106	Burnham, Charles	Philadelphia, Pa	Sifter, flour	Apr. 24, 1866.
54,852	Burnham, E. G	Bridgeport, Conn	Ice pick	May 22, 1866.
57,858	Burnham, John, and William C. Lathrop	La Salle, Ill	Cultivators	Sept. 11, 1866.
58,211	Burnham, Leonard A	Gloucester, Mass	Fishing-line sinkers	Sept. 25, 1866.
56,001	Burnham, William	Union City, Mich	Washing machines	July 3, 1866.
59,551	Burnham, William H. H	East Horner, N. Y	Roofing cement	Nov. 13, 1866.
52,962	Burns, C. C	Gansburg, Ind	Car coupling	Mar. 6, 1866.
	Burns, C. C. (*See* Rees & Graham, assignors.)			
56,364	Burns, John, assignor to self and Joseph W. Baker	Providence, R. I	Coffins	July 17, 1866.
51,798	Burns, William, assignor to self and James F. Griffin	Chicago, Ill	Lanterns	Jan. 2, 1866.
	Burns, William, and Walter Corbett. (*See* Corbett & Burns)			
53,567	Burns, William R	Lancaster, Pa	Corn shellers	Apr. 3, 1866.
	Burns, William R., and George H. Albright. (See Albright & Burns.)			
54,289	Burr, Asher	Middlesex, Conn	Pumps	May 1, 1866.
58,333	Burr, Samuel, assignor to self and David Conlan	New York, N. Y	Sewing machines, fan attachments for	Sept. 25, 1866.
60,339	Burr, Sanford S	Dedham, Mass	Table and bedstead, combined	Dec. 11, 1866.
	Burr, W. P., and W. W. Doane. (*See* Doane & Burr.)			
58,334	Burridge, W. H., assignor to Henry Carter	Cleveland, Ohio	Digger, potato	Sept. 25, 1866.
	Burrill, D. H., *et al.* (*See* Kellogg, E. C. C., assignor.) Same.			
56,524	Burrows, Edmund F	Mystic River, Conn	Garters	July 24, 1866.
	Burrows, George. (*See* Smith, Lewis A., assignor.)			
	Burrows, Thomas A., *et al.* (*See* Parker, H. D., assignor.)			
58,059	Burson, William and D. C	Salineville, Ohio	Churns	Sept. 18, 1866.
	Burson, W. W., and T. F. Kums. (*See* Kums & Burson)			
	Burt, Charles S. (*See* Low, H. H., assignor.) Reissue.			
59,355	Burt, George E	Harvard, Mass	Car brake	Nov. 6, 1866.
59,552	Burt, John	Sturgis, Mich	Lathes, turning	Nov. 13, 1866.
55,614	Burt, Jonathan, and Leonard F. Dunn	Oneida, N. Y	Corn, green, from the cob, device for cutting	June 19, 1866.
2,189	Burt, Merritt	Cleveland, Ohio	Watches (Reissue)	Mar. 6, 1866.
60,340	Burt, William	Marquette, Mich	Cars, coal, mode of fastening and unfastening drop-doors in	Dec. 11, 1866.
	Burtis, C. L., *et al.* (*See* Parker, H. D., assignor.)			
59,741	Burton, A. G., and H. W. Covert	Rochester, N. Y	Filing machine	Nov. 20, 1866.
2,221	Burton, N. F	Galesburg, Ill	Ploughs, gang (Reissue)	Apr. 10, 1866.
51,917	Burton, Oscar F., and Lora B. Hoit	New York, N. Y Cedar Rapids, Iowa	Ploughs	Jan. 9, 1866.
55,615	Burton, Russell	South Adams, Mass	Valves, plug steam	June 19, 1866.
54,681	Buschman, Victor H	Baltimore, Md	Cloth, machine for cutting	May 15, 1866.
55,815	Bush, Charles H	Fall River, Mass	Boiler flues, brushes for	June 26, 1866.
53,568	Bush, Clark T	Rensselaerville, N. Y	Carriages	Apr. 3, 1866.
55,616	Bush, Ira D	Detroit, Mich	Locks	June 19, 1866.
55,617	Bushnell, Ensign A	Horicon, Wis	Horseshoe calks, machine for sharpening	June 19, 1866.
	Buss, Ezra. (*See* Hotchkiss, James, assignor.)			
56,002	Buss, Ezra	Springfield, Ohio	Bread, apparatus for raising	July 3, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Buss, Ezra, and James Hotchkiss. (*See* Hotchkiss & Buss.)			
56,525	Bussey, Esek	Troy, N. Y.	Stove, cooking	July 24, 1866.
56,686	Same	....do	Stove, cooking	July 24, 1866.
57,060	Same	....do	Stove, cooking, water reservoir for	Aug. 7, 1866.
2,319	Same	....do	Stoves, cooking (Reissue)	July 24, 1866.
56,488	Bussey, Esek, assignor to self and Charles A. McLeod	Troy, N. Y.	Stoves, cooking, boilers for	July 17, 1866.
56,526	Butcher, John M.	North Lewisburg, Ohio	Varnish	July 24, 1866.
55,618	Butler, D. P.	Boston, Mass	Lifting bar	June 19, 1866.
56,897	Butler, Edwin B.	New Britain, Conn	Eyelets, machines for making	Aug. 7, 1866.
60,341	Butler, James J	Cincinnati, Ohio	Cutting machine, rotary	Dec. 11, 1866.
51,799	Butler, Palmer L	Cape Vincent, N. Y.	Windows, sashes and frames for	Jan. 2, 1866.
54,290	Butler, Robert B.	Allentown, Pa.	Wrenches	May 1, 1866.
58,212	Butler, William A	New York, N. Y.	Lanterns, &c., reflectors for	Sept. 25, 1866.
53,269	Butler, W. H.	Chicago, Ill.	Pumps, steam, for railroad stations	Mar. 20, 1866.
55,816	Butler, William H.	....do	Water elevators, railroad	June 26, 1866.
55,464	Butler, W. H., and R. G. Hatfield	New York, N. Y.	Cars, mode of starting	June 12, 1866.
59,742	Butler, William R	Greenbush, Ill.	Planters, corn	Nov. 20, 1866.
52,963	Butt, Ze	Ocala, Fla.	Carts	Mar. 6, 1866.
58,770	Butterfield, Charles H.	Sturbridge, Mass.	Egg beater	Oct. 16, 1866.
57,247	Butterfield, George, assignor to David Robinson, jr.	Boston, Mass	Shoe-lacing fastening. (Antedated August 1, 1866)	Aug. 14, 1866.
54,853	Butterfield, Jesse S., and M. S. Green	Philadelphia, Pa.	Railroads, rail for	May 22, 1866.
	Butterfield, W. H., *et al.* (*See* Hill, Edwin H., assignor.)			
	Butterick, Ebenezer. (*See* Wilder, J. W., assignor.)			
52,529	Butters, Thomas	Concord, N. H.	Iron, flat	Feb. 13, 1866.
52,384	Butterworth, T.	Shelbyville, Mo.	Harvesters, corn	Feb. 6, 1866.
55,465	Buttles, O. B	Milwaukee, Wis.	Dental impression cups	June 12, 1866.
60,135	Button, Charles A., deceased, by Angeline Button, administrator.	Pontiac, Mich	Buckle	Dec. 4, 1866.
	Button, Charles P. (*See* Mather Colin, assignor.)			
	Same.			
	Same.			
	Buttrick, Edwin L. (*See* Rae, Julio H., assignor.)			
	Buttrick, G. M. (*See* Earle, W. H., assignor.)			
	Buzzee, George, and D. W. Rust. (*See* Rust & Buzzee.)			
52,637	Buzzell, John P., assignor to self and Henry Hemenway	Clinton, Mass.	Skirts, hoop	Feb. 13, 1866.
54,854	Byerly, H. F., assignor to self and Israel Campbell	Clinton, Ill.	Cultivators	May 22, 1866.
	Byerly, J. B., and C. A. Sheetz. (*See* Illingworth, B., assignor.)			
54,855	Byers, Charles E.	Mahanoi Plain, Pa.	Railroads, switch stand for	May 22, 1866.
54,856	Byfield, William	New York, N. Y.	Needle wrappers	May 22, 1866.
59,961	Byington, Joseph N.	Stockton, Minn.	Wagons, spring	Nov. 27, 1866.
52,964	Byrd, Harvey L.	Augusta, Ga.	Legs, artificial	Mar. 6, 1866.
	Byrd, R. K., *et al.* (*See* Patterson, Newton A., assignor.)			
56,003	Byrne, Thomas	New York, N. Y.	Vessels, leeway indicator for	July 3, 1866.
57,859	Same	....do	Dredging machines	Sept. 11, 1866.
	Cabbell, John M., and Austin Seely. (*See* Seely & Cabbell.)			
56,365	Cabell, Samuel G.	Quincy, Ill.	Crimping machines	July 17, 1866.

56,898	Cabell, Samuel G	Quincy, Ill	Engines, steam, method of operating	Aug. 7, 1866.
56,899	Same	....do	Engines, steam, pistons for	Aug. 7, 1866.
59,553	Same	....do	Doors and shutters	Nov. 13, 1866.
	Cabot, John F. (*See* Witzil, George L., assignor.)			
56,174	Cadman, J. P	Freeport, Ill	Gates	July 10, 1866.
55,055	Cadwallader, Nirum	Birchville, Cal	Blasting, method of	May 29, 1866.
52,026	Cadwell, Caleb	Waukegan, Ill	Harvesters	Jan. 16, 1866.
52,027	Same	....do	Harvesters	Jan. 16, 1866.
57,082	Same	....do	Harvesters	Aug. 14, 1866.
	Caffrey, Francis, and Jackson Harrington. (*See* Harrington & Caffrey.)			
58,375	Cahill, James W	Madison, Ind	Soda fountain	Oct. 2, 1866.
59,708	Cahill, James W., assignor to self and A. S. Davison	....do	Pumps	Nov. 13, 1866.
54,107	Cahoon, Charles W	Portland, Me	Propulsion, wave power	Apr. 24, 1866.
60,471	Same	....do	Vessels, means for propelling	Dec. 18, 1866.
55,056	Calahan, Edward A	Brooklyn, N. Y	Telegraphs, machinery for punching paper for	May 29, 1866.
51,800	Calderwood, Ezra	Portland, Me	Carriages, attaching and detaching breeching straps from shafts of	Jan. 2, 1866.
51,918	Same	....do	Fastener, window-sash. (Antedated January 3, 1866)	Jan. 9, 1866.
57,470	Caldwell, J. A	Springfield, Mass	Ventilator, car	Aug. 28, 1866.
	Caldwell, Walter. (*See* Reed & Pennewell, assignors.)			
56,366	Caldwell, William F	Oxford, Me	Digger, potato	July 17, 1866.
58,060	Same	....do	Planters	Sept. 18, 1866.
60,472	Calef, Joseph W., assignor to self and John R. Folsom	Salisbury, N. H	Tanning	Dec. 18, 1866.
	Calhoun, D. P. (*See* Goodsell & Frisbie, assignors.)			
	Calhoun, D. P., *et al.* (*See* Goodsell & Frisbie, assignors.)			
	Calhoun, David P. (*See* Frisbie & Goodsell, assignors.)			
	Calhoun, D. P., and H. B. Bigelow. (*See* Kellogg, Henry, assignor.)			
	Calkins, J. R., *et al.* (*See* Mull, Jonas, assignor.)			
57,621	Call, Amos, ass'r to the Bemis and Call Hardware and Tool Co	Springfield, Mass	Wrench, pipe	Aug. 28, 1866.
	Callaghan, C., and J. Birmingham. (*See* Fogerty, Valentine, ass'r.)			
52,965	Calvert, F. A	Lowell, Mass	Engines, steam	Mar. 6, 1866.
	Cambridge Horse Nail Company. (*See* Whittemore, Amos W., assignor.)			
2,278	Cambridge, P. C., jr	Enfield, N. H	Bedstead (Design)	Mar. 13, 1866.
2,279	Same	....do	Bedstead (Design)	Mar. 13, 1866.
54,291	Cameron, Adam S	New York, N. Y	Pumps	May 1, 1866.
54,682	Same	....do	Valves, safety, lock-up	May 15, 1866.
56,699	Same	....do	Piston packing	July 31, 1866.
2,407	Same	....do	Engines, steam, valve gear for (Reissue)	Dec. 4, 1866.
58,595	Camp, Charles	Buffalo, N. Y	Elevator buckets	Oct. 9, 1866.
53,407	Campbell, Alexander Collins	Mt. Morris, N. Y	Cholera, method of treating	Mar. 27, 1866.
56,700	Campbell, Andrew	Brooklyn, N. Y	Printing presses, bed recoil springs for	July 31, 1866.
56,701	Same	....do	Printing presses	July 31, 1866.
52,675	Campbell, Charles	Yellow Head, Ill	Nests, hens'	Feb. 20, 1866.
58,714	Campbell, Cornelius L., assignor to Washington W. Wheeton	Binghamton, N. Y	Wagons, machines for fitting axle spindles to skeins of	Oct. 9, 1866.
55,057	Campbell, E. A	New York, N. Y	Supporters, sash	May 29, 1866.
	Campbell, George C., and Frank F. Brower. (*See* Brower & Campbell.)			
52,265	Campbell, George C	Janesville, Wis	Washing machine	Jan. 30, 1866.
52,821	Campbell, George M	Lewistown, Ill	Hemp brakes	Feb. 27, 1866.
	Campbell, G. W., *et al.* (*See* Orbetin, Wm. W. S., assignor.)			
	Campbell, Israel. (*See* Byerly, H. F., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,642	Campbell, James, assignor to self and William Campbell	Harrison, Ohio	Planters, corn	May 8, 1866.
55,237	Campbell, James A	St. Louis, Mo	Steam generators	June 5, 1866.
51,919	Campbell, J. C. and M. V	Syracuse, N. Y	Wells, mode of sinking	Jan. 9, 1866.
55,619	Campbell, Jeremiah	Lancaster, Pa	Cigars, machines for pressing	June 19, 1866.
55,538	Campbell, Jeremiah, assignor to self and John Campbell	Lancaster, Pa	Cigar presses	Oct. 2, 1866.
57,083	Campbell, J. W	New York, N. Y	Printing frames, photographic	Aug. 14, 1866.
59,817	Same	do	Ornamenting mouldings, machines for	Nov. 20, 1866.
52,486	Campbell, John W., assignor to self and Walter Joralemon	do	Ash, coal, sifter	Feb. 6, 1866.
56,702	Campbell, Peter F	Jersey City, N. J	Dock, dry, indicator	July 31, 1866.
59,177	Campbell, R. E	New York, N. Y	Fluid, burning, mode of preparing	Oct. 30, 1866.
	Campbell, Robert T. (*See* Lupton, T. N., assignor.) Reissue.			
	Campbell, Robert T. (*See* Stealey, Thomas J., assignor.) Reissue.			
51,891	Campbell, Thomas A., assignor to self and C. L. Goddard	New York, N. Y	Wool, &c., machinery for oiling	Jan. 2, 1866.
56,175	Campbell, William Henry	Brooklyn, N. Y	Trap, animal	July 10, 1866.
58,356	Candler, Eugene	England	Faucets	Sept. 25, 1866.
2,299	Canfield, David W	New York, N. Y	Shoulder brace and suspenders, combined (Reissue)	July 10, 1866.
53,408	Canfield, James, and Charles Hess	Washington, Iowa / Lyons, Iowa	Cultivators	Mar. 27, 1866.
53,110	Canfield, J. M., H. E. Coleman, and E. P. Wheeler	Lawrence, Kansas	Reaping and mowing machines	Mar. 13, 1866.
53,409	Canfield, J. M., A. T. Still, and E. P. Wheeler	Lawrence, Mass	Harvesters	Mar. 27, 1866.
54,292	Canfield, Samuel A	Carlstadt, N. J	Bed bottom	May 1, 1866.
60,618	Cannon, Charles B	Keokuk, Iowa	Digger, potato	Dec. 18, 1866.
59,356	Cannon, George R	Guilford, Ohio	Wagons, shelvings for	Nov. 6, 1866.
56,900	Cantner, Joseph, and Michael Ulrich	Millheim, Pa	Netting, horse. (Antedated July 5, 1866)	Aug. 7, 1866.
55,620	Capewell, George J	West Cheshire, Conn	Lancets, spring	June 19, 1866.
56,004	Same	do	Oilers	July 3, 1866.
57,471	Same	do	Buttons, machine for grinding and polishing	Aug. 28, 1866.
58,213	Same	do	Lamp burners	Sept. 25, 1866.
59,554	Same	do	Lamp burners	Nov. 13, 1866.
56,527	Capewell, J. T	Woodbury, Conn	Sewing-machine guide	July 24, 1866.
54,500	Capron, E. P. H	Springfield, Ohio	Brick machine	May 8, 1866.
55,817	Same	do	Ladder, step	June 26, 1866.
56,703	Same	do	Brick machine	July 31, 1866.
56,847	Capron, E. P. H., and J. F. Winchell, assignors to selves, T. W. and H. J. Miller.	do	Brick machine	July 31, 1866.
	Capron, Willard O., *et al.* (*See* Hodges, Charles M., assignor.)			
57,472	Carbach, Peter	Cleveland, Ohio	Melodeons	Aug. 28, 1866.
60,473	Carbnow, Alexander	Potsdam, N. Y	Churns	Dec. 18, 1866.
	Card, Albert. (*See* Fellows, John, assignor.)			
54,683	Card, Miles H., and John W. Stewart	Fulton, Ill / Lyons, Iowa	Car coupling	May 15, 1866.
57,860	Card, Thomas S	Cortland, N. Y	Roofing to buildings, attaching	Sept. 11, 1866.
54,108	Carey, Augustus C	Malden, Mass	Mitten, knitted, machine-made	Apr. 24, 1866.
54,109	Same	do	Stocking, knitted, machine-made	Apr. 24, 1866.
58,376	Carey, DeWitt C	Baltimore, Md	Sewing machine, ruffling attachment for	Oct. 2, 1866.

	Carey, John, and Charles O. West. (*See* West & Carey.)			
53,410	Carhart, John W.	Troy, N. Y.	Engines, steam, balanced valves for	Mar. 27, 1866.
52,938	Carle, John F. C.	Germany	Guns, needle, breech-loading	Feb. 27, 1866.
59,178	Carleton, F. B.	Jeffersonville, Vt.	Bits, upper-jaw	Oct. 30, 1866.
56,704	Carleton, George W.	Brunswick, Me.	Composition for settling coffee	July 31, 1866.
56,336	Carlevaris, Prosper	Italy	Light, method of producing	July 10, 1866.
56,901	Carlins, Joseph	Cincinnati, Ohio	Wheels	Aug. 7, 1866.
58,374	Same	do	Preserving flour, grain, &c., method of	Oct. 2, 1866.
57,672	Carlisle, George S.	Columbus City, Iowa	Fence, portable	Sept. 4, 1866.
56,176	Carlisle, J. A., and George A. Bowers	Elgin, Ill.	Cheese vats	July 10, 1866.
59,962	Carmichel, Alexander, and William Barney, assignors to selves and Cottrell & Babcock.	Westerly, R. I.	Looms, stop-motion for	Nov. 27, 1866.
52,028	Carneross, Jacob C.	Philadelphia, Pa.	Plough, snow, railroad	Jan. 16, 1866.
59,709	Carnes, F. M., assignor to self and B. F. S. Logendyke	New York, N. Y.	Brush, shoe and stove	Nov. 13, 1866.
58,771	Carney, Francis H.	Boston, Mass.	Car-seat indicator	Oct. 16, 1866.
59,179	Carpenter, A. H.	New York, N. Y.	Gas, medicated, chemical compound for manufacture of	Oct. 30, 1866.
53,569	Carpenter, Charles F.	Louisville, Ky.	Gold and silver from ores, method of extracting	Apr. 3, 1866.
55,818	Same	do	Ores, treating	June 26, 1866.
52,676	Carpenter, E. H.	Dexter, Mich.	Elevator and carrier, hay, track rope	Feb. 20, 1866.
	Carpenter, Erastus P., and Alfred Fales. (*See* Boyden, Alexander, assignor.)			
	Carpenter, E. R., and W. H. Blackmer. (*See* Blackmer & Carpenter.)			
59,555	Carpenter, George W.	Medina, Mich.	Threshing machines, feed apparatus for	Nov. 13, 1866.
59,180	Carpenter, Hiram	New York, N. Y.	Railway chair	Oct. 30, 1866.
57,837	Carpenter, H. M	Grand Rapids, Mich.	Dresses, systems of cutting	Sept. 4, 1866.
57,473	Carpenter, I. T	Thompsontown, Pa.	Fruit gatherers	Aug. 28, 1866.
57,084	Carpenter, James M.	Providence, R. I.	Braiding machines, let-off mechanism for	Aug. 14, 1866.
52,136	Carpenter, Mary P.	Buffalo, N. Y.	Mop wringer	Jan. 23, 1866.
57,861	Carpenter, R. W.	Brattleboro', Vt.	Musical instruments. (Antedated September 2, 1866)	Sept. 11, 1866.
	Carpenter, T. B. (*See* White, George M., assignor.)			
	Same. (*See* Beckwith, S. V., assignor.)			
	Carr & Company. (*See* Fox, Jacob, assignor.)			
52,385	Carr, John H., and Edward Andrews	Palo Alto, Pa. / Pottsville, Pa.	Tow lines, mode of detaching	Feb. 6, 1866.
58,214	Carr, J. M.	Omaha City, Neb. Ter.	Seeding machine, &c.	Sept. 26, 1866.
54,293	Carr, Nathan B.	Madison, Wis.	Mills, sugar-cane	May 1, 1866.
53,946	Carroll, F. J.	Millville, N. J.	Medicine	Apr. 17, 1866.
54,828	Carré, François	France	Chairs, seats and backs for	May 15, 1866.
	Carrett, W. E., *et al.* (*See* Lock, Warrington, Carrett, Marshall & Telford.)			
59,519	Carricaburu, Leon	Cuba	Pumps, steam	Nov. 6, 1866.
59,181	Carrier, Asa F.	Washington, D. C.	Tool supporter	Oct. 30, 1866.
	Carroll, James. (*See* Lallemont, Pierre, assignor.)			
2,487	Carroll, John W.	Lynchburg, Va.	Trade mark (Design)	Oct. 9, 1866.
2,488	Same	do	Trade mark (Design)	Oct. 9, 1866.
52,137	Carroll, William I.	Natchez, Miss.	Cotton tie	Jan. 23, 1866.
	Carruthers, Robt. and Wickum Field. (*See* Field & Carruthers.)			
	Carryl, Wm. H. (*See* Lockwood, Edwin, assignor.)			
53,270	Carrstens, Matthias	New York, N. Y.	Fire-kindling composition	Mar. 20, 1866.
54,501	Carter, A., and R. Spake	Salem, Iowa	Looms, hand	May 8, 1866.
57,862	Carter, Cyrus C.	Exeter, Ill.	Sowing wheat and other grains, machine for	Sept. 11, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,294	Carter, C. L	Union City, Ind	Harvester rakes	May 1, 1866.
53,111	Carter, Edward S	Keokuk, Iowa	Boot-blacking case	Mar. 13, 1866.
	Carter, Henry. (*See* Burridge, W. H., assignor.)			
52,677	Carter, Henry T	Portland, Maine	Engines, oscillating	Feb. 20, 1866.
53,570	Same	....do	Engines, oscillating, valve gear for	Apr. 3, 1866.
54,295	Carter, John	Philadelphia, Pa	Pump pistons, packing for	May 1, 1866.
57,085	Carter, John W	Greenville, N. J	Corset clasps	Aug. 14, 1866.
2,431	Carter, L. F. and W. W	Bristol, Conn	Clock case front (Design)	Sept. 25, 1866.
57,474	Carter, Merrill E	Syracuse, N. Y	Grooving lumber, machines for	Aug. 28, 1866.
56,367	Carter, Robert	San Francisco, Cal	Pot, tea	July 17, 1866.
2,289	Carter, Wm. H	Cincinnati, Ohio	Alphabet of letters (Design)	Apr. 3, 1866.
55,621	Carton, J,, and Wm. Ralph	Utica, N. Y	Pail, milk	June 19, 1866.
57,086	Carver, Aaron	Little Falls, N. Y	Pumps for deep wells	Aug. 14, 1866.
	Carver, A. W., and Robert R. Miller. (*See* Miller & Carver.)			
57,863	Carver, Charles H	Taunton, Mass	Barrel or cask	Sept. 11, 1866.
52,266	Carver, George G	Roxbury, Mass	Sifter and measure, flour	Jan. 30, 1866.
54,857	Same	....do	Dipper, measurer, and sifter, flour	May 22, 1866.
51,892	Carver, J. E., assignor to self, Charles Jordan, and John Pierce	Bridgewater, Mass	Gins, cotton	Jan. 2, 1866.
53,215	Cary, Ebenezer, ass'r to self, Horace H. Hawley, and John Sully	Burlington, Iowa	Car-coupling	Mar 13, 1866.
56,705	Cary, Samuel	Centreville, La	Boring and grinding apparatus	July 31, 1866.
57,058	Same	....do	Boring apparatus	Aug. 7, 1866.
52,386	Casady, Antonio	Philadelphia, Pa.	Stone, artificial	Feb. 6, 1866.
54,110	Case, Ariel	New Haven, Conn	Stereotype blocks	Apr. 24, 1866.
59,963	Case, G. F	New York, N. Y	Drills, feed-motion for	Nov. 27, 1866.
	Case, H. L., *et al.* (*See* Robbins, R. C., assignor.) Reissue.			
53,947	Case, Jarvis	Springfield, Ohio	Cultivators	Apr. 17, 1866.
2,227	Same	....do	Planters, corn (Reissue)	Apr. 17, 1866.
55,058	Same	....do	Gates, farm	May 29, 1866.
59,357	Case, Oliver F	New Haven, Conn	Soles, water-proof	Nov. 6, 1866.
	Case, Oliver F. (*See* Coburn, John W., assignor.)			
55,622	Case, S., and A. W. Pratt	Pultneyville, N. Y	Churn dasher, atmospheric	June 19, 1866.
55,059	Case, William J. and Rhutson	Pittstown, N. J	Harvester rakes	May 29, 1866.
55,238	Casebeer, Aaron	Sipesville, Pa	Staves, machines for jointing	June 5, 1866.
60,136	Same	....do	Caterpillars, embryo, instrument for destroying	Dec. 4, 1866.
57,286	Casebeer, Samuel	Rosebnrg, Oregon	Plow coulters	Aug. 21, 1866.
53,521	Casey, James E., assignor to self and Richard Lambert	Cortland Village, N. Y	Churns	Mar. 27, 1866.
59,818	Cassel, Joseph B	Worcester Township, Pa	Hoisting power, tread-wheel	Nov. 20, 1866.
53,571	Castelow, Elijah D	Meriden, Conn	Stools, music, means for attaching legs to	Apr. 3, 1866.
53,411	Castle, H. P	Ashtabula, Ohio	Water drawers	Mar. 27, 1866.
51,801	Castle, Simeon B	Cortlandville, N. Y	Wells, bored, mode of operating	Jan. 2, 1866.
	Castor, Thomas	Philadelphia, Pa	Wagons, dumping (Extension)	Aug. 2, 1866.
57,475	Caswell, H. W	Yarmouth, Maine	Tires, device for shrinking	Aug. 28, 1866.
59,358	Caswell, Lyman J	Scott Township, Ind	Cultivators	Nov. 6, 1866.
56,902	Cately, William H	New York, N. Y	Sewing machines, needle for	Aug. 7, 1866.
	Catern, T., and M. R. Shalters. (*See* Shalters & Catern.)			

52,119	Catlin, Francis P	Hudson, Wis	Supporters, sash	Jan. 16, 1866.
53,948	Catlin, Frederick	New York, N. Y	Bottle stopper	Apr. 17, 1866.
53,112	Catt, John	Bourbon, Ind	Washing machine	Mar. 13, 1866.
	Cavan, J. E., and J. Edgar. (*See* Ashley, Frederick, assignor.)			
54,502	Caven, William	Cincinnati, Ohio	Kettles, tea	May 8, 1866.
56,005	Cavender, L. R	Eureka, Ill	Table leaf support	July 3, 1866.
	Caviness, R. E., and W. Paine. (*See* Paine & Caviness.)			
52,530	Caweins, William	Louisville, Ky	Medical compound	Feb. 13, 1866.
59,964	Ceredo, Paul, assignor to self and James H. Springle	Montreal, C. E	Ash sifter	Nov. 27, 1866.
51,802	Cerf, Benoit	New York, N. Y	Bedstead, lounge	Jan. 2, 1866.
	Chabot, Anthony. (*See* Sundell, F., assignor.)			
57,673	Chace, Alonzo	Syracuse, N. Y	Telegraphs, electric	Sept. 4, 1866.
59,189	Chadbourn, Benjamin H	St. Louis, Mo	Fluid, burning	Oct. 30, 1866.
58,377	Chaffee, Edwin M	Providence, R. I	Hose, water-proof, manufacture of	Oct. 2, 1866.
56,528	Chaffee, K. S	Cambridge, Mass	Charcoal, apparatus for making	July 24, 1866.
56,706	Chalfant, Brantly	Williamsport, Pa	Boiler-feeders, automatic	July 31, 1866.
59,183	Chalfant, Francis M	Morgantown, West Va	Sugar, sorghum, manufacture of	Oct. 30, 1866.
55,819	Chalfant, Franklin	Lancaster, Pa	Steam generators, water indicators for	June 26, 1866.
	Chamberlain & Company. (*See* Crowley, John B., assignor.)			
	Same.			
	Same.			
	Chamberlain, Harvey, and George F. White. (*See* White & Chamberlain.)			
58,378	Chamberlain, H. W	Jersey City, N. J	Cord and line reel	Oct. 2, 1866.
2,387	Chamberlin, Edwin	Troy, N. Y	Whip socket fastenings (Reissue)	Nov. 6, 1866.
52,267	Chamberlin, Melvin C	Warsaw, N. Y	Borer, earth	Jan. 30, 1866.
52,946	Chamberlin, Samuel N	Abington, Mass	Gas for illuminating, apparatus for generating	Feb. 27, 1866.
53,113	Chambers, Aaron	North Providence, R. I	Files, machines for cutting	Mar. 13, 1866.
60,137	Chambers, George	Ithaca, N. Y	Car replacer. (Antedated November 26, 1866)	Dec. 4, 1866.
55,239	Chambers, G. F., and S. Robinson	Worcester, Mass	Braiding machines, yarn delivery apparatus for	June 5, 1866.
58,061	Chambers, James	Boonsboro', Md	Stoves, cooking	Sept. 18, 1866.
56,206	Chambers, J. A	Ogdensburg, N. Y	Fire-escape	July 3, 1866.
58,062	Chambers, James T	Utica, N. Y	Rockets, safety	Sept. 18, 1866.
56,667	Champlin, J. F., ass'or to self, S. P. Thompson, and D. C. Corbin	Aurora, N. Y	Planter, corn	July 24, 1866.
55,820	Champlin, John R	Laconia, N. H	Ice-cream freezer	June 26, 1866.
57,674	Chandler, John	Cold Water, Mich	Well tubes	Sept. 4, 1866.
53,730	Chandler, Rufus, assignor to self and M. S. May	Springfield, Mass	Pulley, clamp	Apr. 3, 1866.
53,783	Chandler, Thomas A., and H. C. Goodrich	Rockford, Ill	Sewing machines, thread-tension device for	Apr. 10, 1866.
	Chapin, Almeron F. (*See* Franckboner, Abram, assignor.)			
	Chapin, T., and H. Ogborn. (*See* Ogborn & Chapin.)			
57,675	Chapin, George L	Chicago, Ill	Fastening the slats of Venetian shutters, devices for	Sept. 4, 1866.
56,368	Chapin, Seth P	Atlantic, N. J	Cans, sheet-metal, implement for opening	July 17, 1866.
52,966	Chaplin, John P	Valparaiso, Ind	Stove-pipe drum	Mar. 6, 1866.
54,503	Chaplin, Orril R	Salem, Mass	Square and level, combined	May 8, 1866.
52,387	Chaplin, William J	Dowagiac, Mich	Sewing machines, binding guide for	Feb. 6, 1866.
59,965	Chapman, George T	New York, N. Y	Reins for horses	Nov. 27, 1866.
	Chapman, Henry J. (*See* Hamlet, Ira W., assignor.)			
60,138	Chapman, John C., assignor to self and David M. Weston	Cambridgeport, Mass	Chucks	Dec. 4, 1866.
57,476	Chapman, John H	Utica, N. Y	Grappling irons	Aug. 28, 1866.
	Chapman, John H. (*See* Foulkes, Henry, assignor.)			
	Same. (*See* King, Armon, assignor.)			
58,772	Chapman, Nathan	Hopedale, Mass	Mills, coffee	Oct. 16, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,268	Chapman, Newton	Milford, Mass	Churns	Jan. 30, 1866.
59,710	Chapman, William B., assignor to self, David L. Hough, and William F. Keeler.	La Salle, Ill.	Horse holder	Nov. 13, 1866.
54,684	Chapman, W. D	Theresa, N.Y	Fishing tackle	May 15, 1866.
2,358	Chapman, William S	Baltimore, Md	Carriages, preventing rattling in (Reissue)	Sept. 18, 1866.
52,531	Chappell, George	Peekskill, N. Y	Glass, toilet, adjustable	Feb. 13, 1866.
2,264	Chappell, Richard W	Chicago, Ill	Washing compound (Reissue)	Sept. 25, 1866.
56,707	Chappell, William	Buffalo, N. Y	Stove-pipe top	July 31, 1866.
	Chard, Samuel, and C. W. Le Count. (*See* Le Count & Chard.)			
58,335	Charles, S. Frederick, assignor to self and S. J. Russell	Dahlonega, Ga	Amalgamator	Sept. 25, 1866.
2,498	Charnley, J. A	Providence, R. I	Collar, paper (Design)	Oct. 30, 1866.
57,039	Chase, Albert E., assignor to self and Amos T. Hubbard	Reading, Pa	Bed bottom	Aug 7, 1866.
	Chase, Alonzo, and Edmund Smith, jr. (*See* Smith & Chase.)			
58,164	Chase, E. P., assignor to self and John Eaton	Rockland, Maine	Steam generator	Sept. 18, 1866.
	Chase, Isaac McK. (*See* Howard, William T., assignor.)			
56,848	Chase, John D., D. and J., assignors to selves and Daniel Pomroy	Orange, Mass	Water wheels	July 31, 1866.
56,177	Chase, John H., and J. M. Tiffany	Montgomery, Ill.	Separators, grain	July 10, 1866.
54,296	Chase, Lewson E., assignor to Chase & Company	Charlestown, Mass	Confectionery, manufacture of	May 1, 1866.
53,412	Chase, L. W	Galion, Ohio	Window blind	Mar. 27, 1866.
56,178	Chase, Otis N	Boston, Mass	Microscopes	July 10, 1866.
52,638	Chase, Remington G., assignor to self and Robert T. Lucas	Alexandria, Va	Saw-sets	Feb. 13, 1866.
53,572	Chase, William K	Charlestown, Mass	Carriages, spring power for propelling	Apr. 3, 1866.
54,079	Chatelain, Fidele	France	Engines, rotary	Apr. 17, 1866.
	Chattaway, John J., and P. M. Hendrick. (*See* Hendrick & Chattaway.)			
58,596	Chavanne, Charles	New Orleans, La	Dough mixer	Oct. 9, 1866.
58,773	Cheasebro, James E	Buffalo, N. Y	Plough, sulky, and harrow	Oct. 16, 1866.
58,983	Cheatham, John A	Nashville, Tenn	Gates, farm	Oct. 23, 1866.
52,782	Checkeni, Dominico, assignor to self and Geo. N. Thompson	Marion, Conn	Doll, fancy	Feb. 20, 1866.
52,639	Cheesman, Geo. W., assignor to self and J. W. Osborne	Ansonia, Conn	Skirt hoops, clasps for	Feb. 13, 1866.
54,055	Cheesman, George W., and George Durand, assignors to J. W. Osborne and G. W. Cheesman.	....do	Skirt hoops, clasps for	Apr. 17, 1866.
	Cheever, John H. (*See* Wright, William, assignor.)			
51,920	Cheeney, John L	Lowell, Mass	Loom harness, heddle eyes for	Jan. 9, 1866.
	Cheeney, M. L., and Thomas McAuley. (*See* McAuley & Cheeney.)			
52,967	Cheeney, Orson A	Orleans township, Mich	Grubbing machine	Mar. 6, 1866.
58,063	Chesbrough, Daniel P	Lansingburg, N. Y	Well tubes, receptacle for waste water for	Sept. 18, 1866.
54,056	Chesebrough, N. H., assignor to Thomas C. Van Cott	New York, N. Y	Compound for the cure of dyspepsia, &c	Apr. 17, 1866.
55,240	Chesebrough, Robert A	New York, N. Y	Hydro-carbons, separating	June 5, 1866.
56,179	Same	....do	Petroleum, &c., purifying	July 10, 1866.
56,529	Same	....do	Safes, filling for	July 24, 1866.
58,379	Same	....do	Burning oil for fuel, method of	Oct. 2, 1866.
53,784	Cheshire, Thomas	Cincinnati, Ohio	Stave machines	Apr. 10, 1866.
58,774	Chesley, William	....do	Valves, globe	Oct. 16, 1866.
57,477	Chesnut, Robert	Richmond, Ind	Feeding troughs	Aug. 28, 1866.

60,139	Chester, Richard	Chicago, Ill	Lanterns	Dec. 4, 1866.
60,140	Same	....do	Lanterns	Dec. 4, 1866.
52,138	Chesterman, Edwin	Roxbury, Mass.	Shoes	Jan. 23, 1866.
58,215	Same	....do	Wringer and washing machine	Sept. 27, 1866.
53,241	Chevalier, Philebert	France	Aniline, manufacture of coloring matter from	Mar. 13, 1866.
	Chicago Ditching and Spading Machine Company. (*See* Stevens, Judd, assignor.)			
	Chick, Peter	Taunton, Mass	Air engines	Dec. 18, 1866.
60,474	Chicken, William	Boston, Mass	Sewing machines, feeding device for	Aug. 21, 1866.
57,287	Chickering, Jacob. (*See* Bean, E. E., assignor.)			
	Chidester, John H	Cleveland, Ohio	Computing machines	Dec. 18, 1866.
60,475	Chilcott, John	Buffalo, N. Y	Furnaces, hot-air. (Antedated December 28, 1865)	Jan. 9, 1866.
51,921	Same	....do	Flues and setting of open boilers. (Antedated December 28, 1866)	Jan. 9, 1866.
51,922	Same	....do	Furnaces for steam boilers. (Antedated December 28, 1866)	Jan. 9, 1866.
51,923	Child, Elisha, jr	Springfield, Mass.	Neck ties, paper	May 22, 1866.
54,858	Child, James B	Lee Centre, Ill	Beehives	Apr. 10, 1866.
53,785	Child, Samuel, jr	Baltimore, Md.	Stoves, vapor	July 24, 1866.
56,530	Same	....do	Stoves, vapor	Aug. 21, 1866.
57,288	Children, Edwin	Liberty, Wis	Cultivators	Oct. 2, 1866.
58,380	Childs, Edmund	Philadelphia, Pa.	Bolts for window shutters	Jan. 2, 1866.
51,803	Childs, Samuel B	Syracuse, N. Y	Cars, railway, running gear of	Sept. 25, 1866.
58,216	Chilson, Gardner	Boston, Mass	Stoves, cooking	June 12, 1866.
55,466	Chinnock, George H	New York, N. Y	Pipe, smoking. (Antedated October 19, 1866)	Oct. 30, 1866.
59,184	Same	....do	Toy building blocks. (Antedated November 26, 1866)	Dec. 4, 1866.
60,141	Chipman, George W	Melrose, Mass	Stair-carpet pad	Apr. 3, 1866.
53,573	Same	....do	Carpet lining	Dec. 18, 1866.
60,476	Chipman, Geo. W. (*See* Harrington, John R., assignor.) Reissue. Same.			
	Chipman, N. P., *et al.* (*See* Peeler, Abner, assignor.)			
	Chipman, William W., assignor to the Chipman Mining Company	New York, N. Y	Paris white and whiting, manufacture of	Dec. 4, 1866.
60,142	Chipman, P. Charles	Highland, Ill	Harvester rakes	May 29, 1866.
55,060	Choate, W. C	Washington, D. C	File, letter and paper	Mar. 13, 1866.
53,114	Chollet, Pierre E., and Antoine Choplain. (*See* Choplain & Chollet.) Reissue.			
	Choplain, Antoine, and Pierre E. Chollet	New York, N. Y	Pianos, stringing (Reissue)	Jan. 30, 1866.
2,164	Chormann, E. G	Philadelphia, Pa	Skates	July 17, 1866.
56,369	Christ, Albert	California, Ohio	Fire-arms, revolving	Sept. 11, 1866.
57,864	Christ, Amos B., and Henry H. Stehman	Manor township, Pa	Bridle, safety	Jan. 23, 1866.
52,139	Christian, Andrew	New York, N. Y	Carriage, children's	Apr. 24, 1866.
54,111	Christian, H	....do	Hair, apparatus for crimping	Mar. 27, 1866.
53,413	Christian, John B	Mount Carroll, Ill	Wells, apparatus for inducing the flow of oil from	May 22, 1866.
54,859	Christian, John J	Yonkers, N. Y	Boots, manufacture of	Aug. 21, 1866.
57,289	Christian, William, and J. H. Marrow	New York, N. Y	Knife cleaner	Sept. 11, 1866.
57,865	Christie, Hermann H	Herkimer, N. Y	Pessaries	Nov. 13, 1866.
59,556	Christman, David J., and W. L. Dooling. (*See* Dooling & Christman.)			
	Christman, Thomas B., assignor to self and Willis Daniel	Wilson, N. C	Elevators	Oct. 9, 1866.
58,715	Christy, James	Philadelphia, Pa	Axle box	Jan. 16, 1866.
52,029	Christy, Thomas J	Noblesville, Ind	Car coupling, railway	Apr. 3, 1866.
53,574	Christy, William J	Philadelphia, Pa	Fire-arms, many-barrelled	Sept. 18, 1866.
58,064	Chrysler, Warren. (*See* Wright, L. C., assignor.)			
	Chubb, Thomas J	Brooklyn, N. Y	Mills, quartz	Feb. 13, 1866.
52,532	Church, B. (*See* Whittaker, William M., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,336	Church, Dwight M., assignor to self and George R. Bailey	Derby, Conn	Skirts, ladies'	Sept. 25, 1866.
	Church, George E. (*See* Coggleshall, Durfee W., assignor.)			
	Church, Henry A. (*See* Shurtleff, William H., assignor.)			
57,479	Church, Marius C. C	Parkersburg, West Va	Petroleum, tank for	Aug. 28, 1866.
57,866	Church, M. C. C., and	Parkersburg, West Va	Petroleum, &c., tank for	Sept. 11, 1866.
	Edward H. Knight	Washington, D. C		
	Churchill, Henry, and Jesse W. Hateh. (*See* Hateh & Churchill.)			
	Churchill, Pembroke. (*See* Crossman, C. P., assignor.)			
58,775	Churchill, William	St. Louis, Mo	Engines, steam, governor valves for	Oct. 16, 1866.
54,504	Cissna, Charles S	Burlington, Iowa	Buckle	May 8, 1866.
58,984	Ckertizza, G	New York, N. Y	Ladder	Oct. 23, 1866.
52,030	Clabaugh, N. B	Frederick, Md	Washing machine	Jan. 16, 1866.
54,112	Clapham, James H	New York, N. Y	Drilling, shaft for	Apr. 24, 1866.
54,656	Same	do	Wells, oil, method of boring	May 8, 1866.
51,804	Clapp, Cyrus C	Hartford, Conn	Book-leaf turner	Jan. 2, 1866.
	Clapp, C. D., and H. J. Bardwell. (*See* Bardwell, Anna M., assignor.)			
56,668	Clapp, P. C., assignor to self and Cotton C. Bradbury	Dorchester, Mass	Shears	July 24, 1866.
59,359	Clapp, Perez C., assignor to self and R. W. Turner	do	Lasts	Nov. 6, 1866.
57,478	Clara, Angelos M	Whitney's Point, N. Y	Wagon, hay-loading	Aug. 28, 1866.
57,676	Clark, Barnabas	Mackinaw, Ill	Planters, corn	Sept. 4, 1866.
52,388	Clark, Charles B	New Haven, Conn	Fastening, sash	Feb. 6, 1866.
	Clark, Charles B. (*See* Ferguson, E. L., assignor.)			
54,860	Clark, Charles B., and O. S. Garretson	Buffalo, N. Y	Mop head	May 22, 1866.
53,949	Clark, Charles H	Wilmington, Del	Piston packing	Apr. 17, 1866.
57,290	Clark, Charles S	Huntsburg, Ohio	Roof	Aug. 21, 1866.
	Clark, Daniel, *et al.* (*See* Goulding, Clark & Dickinson.)			
56,180	Clark, Edson P	Northampton, Mass	Pencil, indeliblo	July 10, 1866.
54,113	Clark, Edward	New York, N. Y	Boiler head, bolt-fastening for	Apr. 24, 1866.
53,522	Clark, Francis, assignor to self and Thomas H. Dodge	Auburn, Mass	Fire-arms, breech-loading	Mar. 27, 1866.
53,575	Clark, Georgo	Buffalo, N. Y	Dryer, grain	Apr. 3, 1866.
56,708	Same	do	Dryer, grain	July 31, 1866.
54,080	Clark, Georgo	England	Bottles and jars, manufacture of envelopes for	Apr. 17, 1866.
	Clark, G. C., *et al.* (*See* Baumgarten, Moritz, assignor.)			
	Same.			
56,370	Clark, George, jr	Boston, Mass	Peas, machine for shelling	July 17, 1866.
52,678	Clark, George, jr., and	Dorchester, Mass	Dough, machine for mixing	Feb. 20, 1866.
	Lemuel P. Jenks	Boston, Mass		
56,903	Clark, Henry A., and	Boston, Mass	Writing and drawing card	Aug. 7, 1866.
	Henry J. Griswold	Norwich, Conn		
53,414	Clark, Hiram	Jordan, N. Y	Skate	Mar. 27, 1866.
55,577	Clark, H. M., assignor to Charles Blanchard	Meriden, Conn	Fasteners, blind	June 12, 1866.
52,031	Clark, Isaac	Brooklyn, N. Y	Lamps	Jan. 16, 1866.
54,114	Clark, J. R., and	New York, N. Y	Stoves, gas, burners for	Apr. 24, 1866.
	S. T. Savage	Albany, N. Y		

58,217	Clark, James J., and Henry Splitdorf	East Chester, N. Y / New York, N. Y	Helices, insulating wires of	Sept. 25, 1866.
56,007	Clark, James M	Jersey City, N. J	Pen and pencil holder	July 3, 1866.
53,115	Clark, John	Philadelphia, Pa	Altiscopes	Mar. 13, 1866.
58,381	Clark, John G	Middletown, Ohio	Planting cotton seed, machine for	Oct. 2, 1866.
2,297	Clark, John H., and John Rhinesmith	Fort Wayne, Ind	Weather boarding (Design)	May 1, 1866.
56,904	Clark, J. S	Auburn, Mass	Butter tongs	Aug. 7, 1866.
	Clark, J. S. (*See* Martin, Beesley & Currie, assignors.) Design.			
55,467	Clark, Morell	Castalia, Iowa	Reaping and mowing machines	June 12, 1866.
58,065	Clark, M. C	Appleton, Wis	Racks, sheep	Sept. 18, 1866.
52,389	Clark, Orrin R., and Frelon H. Slyter	Marengo, Ill	Laster, shank	Feb. 6, 1866.
58,985	Clark, Patrick	Rahway, N. J	Blowers, fan	Oct. 23, 1866.
54,115	Clark, Richard	Chicago, Ill	Fluid, hair curling	Apr. 24, 1866.
	Clark, Sawyer & Co. (*See* Livermore, O. J., assignor.)			
	Clark, Sidney L. (*See* Manville, Eli J., assignor.)			
57,087	Clark, William	Boston, Mass	Burners, gas, regulators for	Aug. 14, 1866.
59,819	Clark, William	Valatie, N. Y	Reins, harness	Nov. 20, 1866.
56,704	Clark, William P	Boston, Mass	Soda-water apparatus, draught cock for	July 31, 1866.
56,182	Clarke, Daniel	Ipswich, Mass	Coffins	July 10, 1866.
59,311	Clarke, Geo. H., and Chas. Van Wagener, assign's to Geo. H. Clarke	New York, N. Y	Grate bar	Oct. 30, 1866.
60,143	Clarke, Greville E	Racine, Wis	Traps, animal	Dec. 4, 1866.
58,776	Clarke, Henry W	Newport, R. I	Fence posts, setting	Oct. 16, 1866.
56,181	Clarke, John N	Cincinnati, Ohio	Horseshoes	July 10, 1866.
56,710	Clarke, John W	Kingston, Wis	Funnel, measuring	July 31, 1866.
56,711	Same	do	Duster, sulphur	July 31, 1866.
56,008	Clarke, Samuel	New York, N. Y	Bedsteads, bed-bug protector for	July 3, 1866.
58,066	Clarkson, Henry	Peekskill, N. Y	Irons, sad, handle for	Sept. 18, 1866.
58,597	Clarridge, John	Pancoastburg, Ohio	Plough, double-shovel	Oct. 9, 1866.
58,998	Same	do	Planter, corn, single row	Oct. 9, 1866.
60,619	Same	do	Saw-set	Dec. 18, 1866.
59,185	Class, Frederick C	Roanoke, Ind	Fence, portable	Oct. 30, 1866.
54,685	Clau, W. F., assignor to Nathan Page	Cleveland, Ohio	Pump sprinkler	May 15, 1866.
54,297	Claude, Charles	New York, N. Y	Locks	May 1, 1866.
54,686	Clavidge, Daniel	Indianapolis, Ind	Air from cases, apparatus for expelling	May 15, 1866.
	Clay, C. M. (*See* Broadwell, Lewis Wells, assignor.)			
	Clay, C. M. (*See* Broadwell, Lewis Wells, assignor.)			
53,576	Clay, James O	Hudson, Wis	Broom head	April 3, 1866.
	Clay, W. W. (*See* Kubach, C. B., assignor.)			
55,241	Clay, William W	Philadelphia, Pa	Knitting machines	June 5, 1866.
	Clayton, Charles H. (*See* Hovey, Francis, assignor.)			
53,032	Clayton, Samuel P	South Amboy, N. J	Medical compound	Jan. 16, 1866.
57,677	Clayton, William	Bristol, Conn	Knives to their handles, attaching	Sept. 4, 1866.
57,867	Clemens, Frank	Lafayette, Ind	Whiffletrees	Sept. 11, 1866.
52,533	Clemens, Gilbert H	United States army	Saw-mills, head blocks for	Feb. 13, 1866.
	Clemens, G. H., and D. G. Coppin. (*See* Coppin & Clemens.)			
59,360	Clemens, Stillman A	Chicago, Ill	Threshing flax, machine for	Nov. 6, 1866.
59,501	Clemens, Stillman A., assignor of half interest to James J. Walworth.	do	Flax straw, machine for straightening, breaking, and cleaning	Nov. 6, 1866.
59,502	Clemens, Stillman A., assignor of half interest to James J. Walworth.	do	Flax, tangled, machine for straightening and threshing	Nov. 6, 1866.
59,503	Clemens, Stillman A., assignor of half interest to James J. Walworth.	do	Flax, machine for breaking and cleaning	Nov. 6, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,061	Clement, W	Charleston, Ill	Fruit baskets	May 29, 1866.
57,451	Clements, James Moore	England	Sewing machines for stitching button-holes	Aug. 21, 1866.
2,323	Clemons, George F	Springfield, Mass	Sewing machines, cloth guide for (Reissue)	July 31, 1866.
57,088	Clemson, William	Middletown, N. Y	Saws	Aug. 14, 1866.
57,868	Cleveland, Rienzi L	Durand, Ill	Planter, corn, hand	Sept. 11, 1866.
	Cleveland, Samuel E., and Thomas S. Ray. (*See* Ray & Cleveland.)			
53,271	Cleveland, William	Orange, N. Y	Faucets, stop	Mar. 20, 1866.
54,505	Cleveland, William C	Cambridge, Mass	Brush, scrubbing	May 8, 1866.
	Cleveland, William H., and Edgar Farmer. (*See* Jackson, Luther, assignor.)			
54,861	Clift, Amos, jr	Mystic River, Conn	Churns	May 22, 1866.
58,337	Clift, Horace, assignor to E. Burrows Brown	Mystic River, Conn	Churns	Sept. 25, 1866.
52,534	Cline, John C	Philadelphia, Pa	Musical staff	Feb. 13, 1866.
54,057	Cline, John C., assignor to self and E. Potts	do	Engine, steam, governors	Apr. 17, 1866.
59,966	Climer, Henry, and John D. Riley	Cincinnati, Ohio	Planing machines	Nov. 27, 1866.
56,371	Clinton, Charles D	Peoria, Ill	Car coupling	July 17, 1866.
54,862	Clinton, Lyman, and Ezra S. Munson	North Haven, Conn	Rakes, horse	May 22, 1866.
	Clinton Wire Cloth Company. (*See* Bigelow & Waters, assignors.)			
2,213	Clissold, William, assignor to George S. Harwood and George H. Quiney.	Boston, Mass	Wool, machine for oiling (Reissue)	Mar. 27, 1866.
	Close, S. H., and Charles Dixon. (*See* Dixon & Close.)			
58,599	Close, Thomas J	Philadelphia, Pa	Mouldings, machine for making	Oct. 9, 1866.
57,089	Close, Walter R	Bangor, Maine	Water wheels	Aug. 14, 1866.
52,358	Close, W. R., assignor to self and Jones T. Dinsmore	do	Water wheels	Jan. 30, 1866.
58,067	Close, Frederiek	New Haven, Conn	Boot heels	Sept. 18, 1866.
58,218	Clough, Baxter	Amherst, Ohio	Gates	Sept. 25, 1866.
	Clough, Sullivan E. (*See* Duchemin, William, assignor.)			
57,090	Clow, George, assignor to self, Abram, and Charles Clow	Port Byron, N. Y	Thill coupling	Aug. 14, 1866.
	Cluff, William. (*See* Guttridge, D. C., assignor.)			
53,272	Cluxton, James R	Russelville, Ohio	Neck-ties	Mar. 20, 1866.
59,967	Clymer, Francis	Galion, Ohio	Tree protector	Nov. 27, 1866.
54,298	Clymo, Henry	Galena, Ill	Harvester rakes	May 1, 1866.
	Coate, J. B. (*See* Grant, B. A., assignor.)			
59,968	Coate, John H	West Milton, Ohio	Grate, fire, and andiron, portable	Nov. 27, 1866.
	Coates, Giles K. (*See* Smith, Henry.)			
	Same.			
59,186	Coates, Lewis	Collamer, Pa	Measures, variable	Oct. 30, 1866.
52,140	Coates, William B	Philadelphia, Pa	Iron-holder	Jan. 23, 1866.
56,372	Cobb, Charles	Plymouth, Mass	Cordage machine	July 17, 1866.
	Cobb, C. jr., *et al.* (*See* Marden, Samuel, assignor.)			
	Cobb, C. and D., *et al.* (*See* Staekpole, Greenleaf, assignor.)			
	Cobb, C. J., *et al.* (*See* Wiley, Moses H., assignor.)			
	Same. (*See* Hall, Daniel B., assignor.)			
	Corburn, J. F., and G. V. Sheffield. (*See* Sheffield & Corburn.)			

53,523	Corburn, John W., assignor to self and Oliver F. Case	New Haven, Conn	Soles, water-proof	Mar. 27, 1866.
55,242	Cochen, Theodore	Williamsburg, N. Y	Bottle filler	June 5, 1866.
54,506	Cochran, J. D	Milford, N. H	Seeding machine	May 8, 1866.
54,507	Samo	do	Planters, corn	May 8, 1866.
52,679	Cochran, J. W	New York, N. Y	Cartridge extractor for breech-loading fire-arms	Feb. 20, 1866.
2,211	Same	do	Fire-arms, revolving (Reissue)	Mar. 27, 1866.
54,863	Same	do	Chair, sofa, and car seats	May 22, 1866.
57,712	Same	do	Projectiles for rifled ordnance, packing	July 31, 1866.
55,821	Cochran, Robert	Morrison, Ill	Pumps	June 26, 1866.
52,535	Cochrane, James C	Rochester, N. Y	Stove, heating	Feb. 13, 1866.
54,687	Cochrane, John	Wall Township, N. J	Screws, machinery for forging	May 15, 1866.
57,291	Codding, Charles A	Battle Creek, Mich	Washing machine	Aug. 21, 1866.
58,068	Coddington, George W	Middletown, Ohio	Saw-mills	Sept. 18, 1866.
57,091	Coe, Winfield R	West Meriden, Conn	Roofing mastic, method of spreading	Aug. 14, 1866.
52,961	Coes, A. G	Worcester, Mass	Wrenches	Mar. 6, 1866.
59,557	Coffey, John	Monroe, N. Y	Plough for cutting bogs	Nov. 13, 1866.
60,477	Coffey, John A	England	Distilling apparatus	Dec. 18, 1866.
	Coffin, David N. B., jr., and Irah D. Spaulding. (*See* Spaulding & Coffin.)			
59,969	Coffin, D. N. B., jr., assignor to self and I. D. Spaulding	Boston, Mass	Capstan and windlass	Nov. 27, 1866.
54,688	Coffin, George	do	Windlasses, ships', devices for operating	May 15, 1866.
59,970	Same	do	Sleighs and carriages, attaching shafts to	Nov. 27, 1866.
55,468	Coffin, John E	Portland, Me	Books, machine for covering the backs of	June 12, 1866.
58,600	Coffin, Thomas M	Plymouth, Mass	Faucets	Oct. 9, 1866.
58,069	Coffin, Z. E	Newton, Mass	Windlass, capstan for	Sept. 18, 1866.
58,219	Coffman, W. S	Cold Water, Mich	Seeding machine, broadcast	Sept. 25, 1866.
55,578	Coggeshall, Durfee W., assignor to George E. Church	Providence, R. I	Wrenches, pipe	June 12, 1866.
60,478	Coggeshall, William	Springfield, Ohio	Paints, and in coating wood, stone, &c	Dec. 18, 1866.
	Coggswell & Co. (*See* Fagin, A. W., assignor.)			
53,116	Cogswell, Thomas	Boston, Mass	Cars, railway, street, extension holding strap for	Mar. 13, 1866.
54,689	Cogswell, William	Ottawa, Ill	Harvesters, &c., ratchet attachment for	May 15, 1866.
56,183	Same	do	Planters, corn	July 10, 1866.
	Cohn, Adolph, and D. Isaacsohn. (*See* Isaacsohn & Cohn.)			
	Cohn, D. L., and Moritz Herzog. (*See* Herzog & Cohn.)			
54,864	Colahan, Samuel	Cleveland, Ohio	Hay for market, apparatus for preparing	May 22, 1866.
53,786	Colbert, Lewin A	Baltimore, Md	Shade, window, paper	Apr. 10, 1866.
53,577	Colburn, Levi H	Chicago, Ill	Ploughs, rotary	Apr. 3, 1866.
59,361	Same	do	Steam generators	Nov. 6, 1866.
2,327	Colburn, Wells L., assignor through mesne assignments to A. D. Crombie, Lucy Colburn, and J. M. D. Greene.	Elmira, N. Y	Engines, steam, cut-off gear for (Reissue)	Aug. 7, 1866.
2,328	Colburn, Wells L., assignor through mesne assignments to A. D. Crombie, Lucy Colburn, and J. M. D. Greene.	Elmira, N. Y	Engines, steam, cut-off valve gear for division 2 of (Reissue)	Aug. 7, 1866.
56,713	Colburn, Elisha P	Boston, Mass	Paddle wheel	July 31, 1866.
58,070	Colburn, Elisha T	Boston, Mass	Irons, sad	Sept. 18, 1866.
52,390	Colby, Augustus J	New York, N. Y	Skirts, skeleton	Feb. 6, 1866.
58,777	Colby, Cummings P	Lancha Plana, Cal	Quartz, mills for crushing	Oct. 16, 1866.
2,408	Colby, George, jr., assignor to Colby Brothers & Co	Waterbury, Vt	Clothes wringers (Reissue)	Dec. 4, 1866.
53,787	Colby, George J., and Levi H. Thomas	do	Boat, toy. (Antedated March 30, 1866)	Apr. 10, 1866.
	Colby, Ora C. (*See* Welsh, William, assignor.)			
57,869	Coldwell, T	Matteawan, N. Y	Files, apparatus for stripping	Sept. 11, 1866.
56,373	Cole, Alexander	Lockport, N. Y	Bed bottoms, spring	July 17, 1866.
57,480	Cole, Daniel	Orwell, Pa	Traps, animal	Aug. 28, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,273	Cole, David E.	Manayunk, Pa	Vinegar, manufacture of	Mar. 20, 1866.
59,558	Cole, De Lance	Marshall, Ill	Fastener, sash	Nov. 13, 1866.
51,924	Cole, Eli	Tarrytown, N. Y	Fastening, shutter	Jan. 2, 1866.
57,678	Cole, G. W.	Canton, Ill	Stalks in the field preparatory to ploughing, machine for cutting	Sept. 4, 1866.
53,415	Cole, Harrison	Cincinnati, Ohio	Furniture, flour attachment for	Mar. 27, 1866.
52,822	Cole, Henrietta K.	New York, N. Y	Dresses, ladies', clasps for looping	Feb. 27, 1866.
55,469	Same	do	Fluting machines	June 12, 1866.
52,536	Cole, L. K., and Howard Soule, jr	Syracuse, N. Y	Bridges	Feb. 13, 1866.
53,416	Cole, Munson	Colebrook, Conn	Straw cutters	Mar. 27, 1866.
58,601	Cole, Munson and David	Colebrook, Conn. Kent, Conn	Hay, machines for raking and loading	Oct. 9, 1866.
	Cole, Oren, and Thomas McQuirk. (*See* McQuirk & Cole.)			
57,679	Cole, Thomas	Marshalltown, Iowa	Washing machine	Sept. 4, 1866.
58,220	Cole, Thomas	Cedar Hill, Ohio	Sorghum evaporator	Sept. 25, 1866.
60,479	Cole, V. and E	Detroit, Mich	Car coupling	Dec. 18, 1866.
52,680	Coleman, Columbia	Allegheny, Pa	Rake, horse, teeth	Feb. 20, 1866.
59,500	Coleman, C. C., deceased, by E. B. Stoddard, administrator	Worcester, Mass	Fire-arms, breech-loading	Nov. 6, 1866.
57,092	Coleman, Ebenezer	Woburn, Mass	Wheel tires	Aug. 14, 1866.
	Coleman, H. E., *et al.* (*See* Canfield, Coleman & Wheeler.)			
58,071	Coleman, Lucius M. B	Danby, N. Y	Wagon shackle	Sept. 18, 1866.
51,925	Coles, Adam G	Mamaroneck, N. Y	Well drills	Jan. 10, 1866.
53,756	Coles, Cowper Phipps	Ventnor, England	Ships, means for protecting the bottoms of	Apr. 3, 1866.
	Coles, E. S. and Butler. (*See* Ruperts, John B., assignor.)			
	Colesberry, Alexander P. (*See* Leland, Amos, assignor.)			
52,111	Collen, John B., assignor to self and John McGill	Philadelphia, Pa	Steam generators, automatic feed apparatus for	Jan. 16, 1866.
53,731	Collicott, John, assignor to self and Otis Marshall	Boston, Mass	Engines, steam, rotary	Apr. 3, 1866.
55,623	Collier, Richard	Springfield, Ohio	Pruning instrument	June 19, 1866.
59,820	Collins, D. L., assignor to self and Elbridge Sims	Antwerp, N. H	Bell, door, and burglar alarm	Nov. 20, 1866.
	Collins, John. (*See* Oakley, Frederick, assignor.)			
	Collins, John, and Joseph Sholl. (*See* Sholl & Collins.)			
59,187	Collins, John F	New York, N. Y	Distillation	Oct. 30, 1866.
59,334	Same	do	Petroleum, &c., apparatus for distilling	Oct. 30, 1866.
59,891	Same	do	Alcohol and other spirits, manufacture of	Nov. 20, 1866.
2,396	Same	do	Distillation (Reissue)	Nov. 20, 1866.
52,969	Collins, J. K.	Huntsville, Ala	Joint, knuckle	Mar. 6, 1866.
	Collins, M. H., and William Jones. (*See* Jones & Collins.)			
58,602	Collins, M. H., assignor to self and William H. Holland	Chelsea, Mass	Engines, steam, rotary	Oct. 9, 1866.
58,603	Collins, Michael H., and William H. Holland	Chelsea, Mass	Paddle wheel	Oct. 9, 1866.
60,480	Collins, O. K., and William B. Grover	Woodbury, N. J	Stoves, vapor-burning	Dec. 18, 1866.
	Collins, Peek & Co. (*See* Loper, Henry S., assignor.)			
54,058	Collins, Richard, assignor to self, Gilbert A. Smith, and John S. Lockwood.	Chicopee, Mass	Looms, harness motion for	Apr. 17, 1866.
	Colton, Albert B., and Anton Saur. (*See* Saur & Colton.)			
	Columbia, Dana L., and Marshall D. Higley. (*See* Higley & Columbia.)			

54,865	Colvin, L. O	New York, N. Y	Milkers, cow	May 22, 1866.
	Colwell, L. and J., *et al.* (*See* Shaw, W. Anthony, assignor.)			
58,986	Colwell, William	Chilicothe, Ill	Corn shellers	Oct. 23, 1866.
	Colwell, Wm. S., and John R. Winfield. (*See* Winfield & Colwell.)			
57,680	Comer, Henry B	Pittsburg, Pa	File-cutting machines	Sept. 4, 1866.
58,382	Comer, Henry B., and John Denton	....do	Lightning-rods	Oct. 2, 1866.
52,681	Comfort, Samuel	Morrisville, Pa	Counting machines	Feb. 20, 1866.
59,188	Compton, William	New York, N. Y	Beer, &c., vessel for	Oct. 30, 1866.
	Comstock, H., and M. Burnett. (*See* Burnett & Comstock.)			
56,184	Comstock, J. E. D	New York, N. Y	Books and manuscripts, device for holding	July 10, 1866.
59,362	Comstock, Levi R	Macon, Mo	Stove-pipe and damper	Nov. 6, 1866.
59,363	Same	....do	Stove-pipe drum	Nov. 6, 1866.
52,682	Comstock, Norman	Westfield, Ill	Gates, self-operating	Feb. 20, 1866.
59,364	Conant, Albert, and Israel F. Brown	New London, Conn	Pumps	Nov. 6, 1866.
53,788	Conant, A. P	Smithland, Ky	Water wheels	Apr. 10, 1866.
56,714	Conant, L. T	New Lisbon, Ohio	Sewing machines, cloth guide and binder gauge for. (Antedated July 25, 1866.	July 31, 1866.
58,604	Conant, William	Geneva, Ill	Steam generators	Oct. 9, 1866.
	Conant, Wm. E., and G. W. Hubbard. (*See* Hubbard & Conant.) Reissue.			
56,715	Conard, Thomas P	West Grove, Pa	Shaving cases, portable	July 31, 1866.
56,009	Conarroe, Robert	Camden, Ohio	Stripper, cane, and knife, combined	July 3, 1866.
56,185	Same	....do	Mills, sorghum	July 10, 1866.
58,778	Same	....do	Straw cutter	Oct. 16, 1866.
51,926	Conde, Alonzo B	New York, N. Y	Leather straps, clasps for	Jan. 9, 1866.
	Condict, N. W., jr. (*See* James, Christopher R., assignor.)			
	Condie, J., and B. J. Harrison. (*See* Harrison & Condie.)			
55,003	Condon, Charles E., assignor to self and G. B. Hammer	Harrisburg, Pa	Supporters, sash	May 22, 1866.
2,353	Conkey, Samuel	New York, N. Y	Statuette (Design)	July 10, 1866.
54,866	Conkling, John P	Batchellerville, N. Y	Check boxes, detecting	May 22, 1866.
58,605	Conley, J. J	New York, N. Y	Lathes for turning shafting	Oct. 9, 1866.
	Conlan, David. (*See* Burr, Samuel, assignor.)			
55,624	Conlon, Dennis	Portland, Maine	Fastenings, door, portable	June 19, 1866.
60,481	Connel, James M	Newark, Ohio	Springs, door	Dec. 18, 1866.
56,374	Connelly, E. G	Jasper, Ind	Churn dashers	July 17, 1866.
56,010	Connelly, Joseph H	Weeling, West Va	Lamp-shade supporter	July 3, 1866.
56,011	Same	....do	Lamp chimney and shade, combined	July 3, 1866.
58,221	Same	....do	Gas, manufacture of	Sept. 25, 1866.
52,269	Connelly, Richard S	Johnsonville, N. Y	Bottle stoppers	Jan. 30, 1866.
52,537	Conner, James	Richmond, Ind	Straw cutters	Feb. 13, 1866.
52,487	Conner, John C., assignor to T. J. Hennessey	Williamsburg, N. Y	Wrenches	Feb. 6, 1866.
52,033	Conner, J. D	Bloomington, Ill	Stoves, coal	Jan. 16, 1866.
58,938	Connett, A. M., assignor to J. C. Moore and Sarah A. Connett	Madison, Ind	Shingle machines	Oct. 16, 1866.
	Connor, Edward O., and Philip Keenan. (*See* Keenan & Connor.) Reissue.			
57,681	Connor, J. C	Dover, N. H	Clothes-dryers	Sept. 4, 1866.
56,012	Conolly, Charles W	Rochester, N. Y	Draught attachment	July 3, 1866.
56,669	Conover, Jacob A., assignor to the Empire Breech-loading Fire-arms Company.	New York, N. Y	Fire-arms, breech-loading	July 24, 1866.
54,059	Conrad, Ernst, assignor to self and H. Coulter	Philadelphia, Pa	Lanterns	Apr. 17, 1866.
59,559	Conrad, John	Centralia, Ill	Planters, corn	Nov. 13, 1866.
2,475	Conradt, Augustus	Philadelphia, Pa	Spoon handle (Design)	Oct. 2, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Conrick, Edward P., and Wm. T. McMiller. (*See* McMiller & Conrick.)			
	Conroy, T. J., *et al.* (*See* Sangster, James, Amos W., and Wm. H., assignors.)			
52,683	Constable, John L	New York, N. Y	Car wheel	Feb. 20, 1866.
57,481	Conver, Jessie, and John Borthwick	Philadelphia, Pa	Radiator, heat	Aug. 28, 1866.
57,622	Converse, Charles A., and Samuel S. Hopkins, assignors to the Bacon Manufacturing Company.	Norwich, Conn	Fire-arms, revolving	Aug. 28, 1866.
58,222	Converse, C. C	New York, N. Y	Press, baling	Sept. 25, 1866.
56,716	Converse, William F	Harrison, Ohio	Car spring	July 31, 1866.
52,214	Conway, James H., deceased, by Ellen V. Conway, executrix	Richmond, Va	Medical compound	May 29, 1866.
57,623	Conway, J. W., assignor to self and Wm. Conway	Madison, Ind	Cars, street, method of propelling	Aug. 28, 1866.
54,690	Cook, A. C	Ohio, Ill	Yokes, neck	May 15, 1866.
55,062	Cook, Aaron J	North Branford, Conn	Wells, self-tilting buckets for	May 29, 1866.
52,684	Cook, Anson G	Burlington, Vt	Furnace, cupola or blast	Feb. 20, 1866.
55,470	Cook, Byron D	Clarendon, Mich	Seeding machine	June 12, 1866.
55,199	Cook, Edward, assignor to self and Bradford Jones	Valparaiso, Ind	Tires, wagon, machine for upsetting	May 29, 1866.
55,471	Cook, Elisha H	Clarendon, Mich	Washing machine	June 12, 1866.
53,685	Cook, Henry, assignor to self and John K. Welch	Bluffton, Ind	Stove-pipe drum	Feb. 20, 1866.
52,970	Cook, Henry O	Portland, Maine	Steering apparatus, hydraulic	Mar. 6, 1866.
55,063	Cook, Isaac	St. Louis, Mo	Flour packers	May 29, 1866.
58,383	Cook, James	Collinsville, Ohio	Cultivators	Oct. 2, 1866.
59,821	Cook, J. C	Buffalo, N. Y	Stave machines. (Antedated November 16, 1866)	Nov. 20, 1866.
56,531	Cook, John K	Richmond, Ind	Cans, fruit, expanding frames for soldering	July 24, 1866.
	Cook, Martin R. (*See* Hill & Wood, assignors.) Reissue.			
54,116	Cook, Sarah E	Philadelphia, Pa	Hair, human, braided, imitation of	Apr. 24, 1866.
2,294	Same	do	Head, ornament for the (Design)	Apr. 24, 1866.
53,789	Cook, Theodore R	Saratoga Springs, N. Y	Stove-pipe drum	Apr. 10, 1866.
53,950	Cook, Thomas R	West Newton, Ind	Ditching machine	Apr. 17, 1866.
55,064	Cook, William G	New York, N. Y	Garments, fastenings for	May 29, 1866.
59,560	Cook, William M	Niles, Mich	Churn	Nov. 13, 1866.
	Cook, William T. (*See* Faught, Lemuel G., assignor.)			
52,804	Cooke, James C	Middletown, Conn	Files, machines for cutting	Feb. 20, 1866.
56,375	Cooley, A. J	Chardon, Ohio	Hay forks, horse	July 17, 1866.
56,717	Cooley, E. P	New York, N. Y	Broom	July 31, 1866.
58,779	Cooley, Solon	Oakwood, Mich	Press, wool	Oct. 16, 1866.
58,606	Coolidge, John B	Boston, Mass	Burners, gas	Oct. 9, 1866.
52,939	Coombs, Philip	England	Whey from curd, apparatus for separating	Feb. 27, 1866.
56,718	Coomes, Fernando E	Berlin, Wis	Cradle and chair, combined	July 31, 1866.
60,144	Coon, Emmett	Kalamazoo, Mich	Vice	Dec. 4, 1866,
52,538	Coon, Emmett, and Nathan Hill	Comstock, Mich	Vice, horseshoe	Feb. 13, 1866.
54,691	Coon, Lewis L	Nunica, Mich	Shoemakers' jack	May 15, 1866.
57,682	Coon, Matthew P	Brooklyn, N. Y	Gas, apparatus for generating	Sept. 4, 1866.
54,299	Coop, James	Pittsburg, Pa	Trusses	May 1, 1866.
53,578	Cooper, Edward A	Lancaster, N. Y	Gig tree	Apr. 3, 1866.

53,274	Cooper, George A., and Consider Southworth	Stoughton, Mass	Bonnet frames	Mar. 20, 1866.
55,243	Cooper, George E.	Baltimore, Md	Drill and fertilizer, combined	June 5, 1866.
58,607	Cooper, J.	Mt. Vernon, Ohio	Evaporator	Oct. 9, 1866.
56,340	Cooper, John	Dublin, Ind	Churns	July 10, 1866.
	Cooper, John K., *et al.* (*See* Greacen, Foster & Cooper.)			
53,417	Cooper, John J.	Olmsted, Ohio	Mail bags, apparatus for receiving and delivering	Mar. 27, 1866.
52,823	Cooper, N. B.	Gratis, Ohio	Broom head	Feb. 27, 1866.
56,141	Cooper, Theodore, assignor to self and Thomas Phillips	Warwick, R. I.	Iron, tools for turning and cleaning	July 3, 1866.
58,039	Cooper, William S	Philadelphia, Pa	Engines, steam, valves	Sept. 11, 1866.
59,122	Cooper, William S., assignor to Cooper, Jones & Cadbury	....do	Faucets	Oct. 23, 1866.
56,013	Cooper, William W.	Washington, D. C	Goniometers	July 3, 1866.
	Cope, Ezra, and James R. Maxwell. (*See* Maxwell & Cope.)			
	Cope, L. H. (*See* Ewing, R. M., assignor.)			
53,275	Copeland, Charles D	Fall River, Mass	Knife-cleaning box	Mar. 20, 1866.
56,905	Copeland, Charles W	New York, N. Y	Tube thimbles	Aug. 7, 1866.
59,822	Copleston, E.	Wrentham, Mass	Hats and bonnets, fabrics for	Nov. 20, 1866.
55,763	Coppage, Francis C., assignor to self and William Coppage	Terre Haute, Ind	Harvesters	June 19, 1866.
56,320	Same	....do	Harvesters	July 10, 1866.
58,987	Coppin, D. G., and G. H. Clemens	Cincinnati, Ohio	Valves, safety	Oct. 23, 1866.
58,072	Coppuck, Malcolm M	Philadelphia, Pa	Tobacco pipe	Sept. 18, 1866.
55,244	Corbett, Walter, and William Burns	St. Louis, Mo	Lock	June 5, 1866.
	Corbin, D. C., *et al.* (*See* Champlin, J. F., assignor.)			
56,719	Corbin, George E., and John W. Pugh	Grand Rapids, Mich	Water wheels	July 31, 1866.
57,683	Corbin, Gilbert E.	St. John's, Mich	Bag-holder	Sept. 4, 1866.
	Corbin, P. and F. (*See* Blake, Henry D., assignor.)			
	Corbin, P. and F., *et al.* (*See* Arnold, S. D., assignor.) Design.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
56,376	Cordes, Henry	Belleville, N. J	Bedsteads, invalid	July 17, 1866.
56,377	Cordis, Francis T.	Long Meadow, Mass	Tool-holder	July 17, 1866.
52,391	Corey, G. W	Port Jervis, N. Y	Blacking, manufacture of	Feb. 6, 1866.
54,692	Corey, Thomas	Marlboro', Mass	Boots and shoes, machine for cutting pegs out of. (Antedated November 15, 1865.)	May 15, 1866.
	Corey, Thomas, *et al.* (*See* Shaw, Samuel J., assignor.)			
	Same. (*See* Shaw & Worcester, assignor.)			
59,504	Corey, W. P., assignor to self and D. P. Corey	Amsterdam, N. Y	Valve gear	Nov. 6, 1866.
54,060	Corfield, William, assignor to self and J. A. Dougherty	Philadelphia, Pa	Fluid, burning, manufacture of	Apr. 17, 1866.
54,061	Same	....do	Fluid, burning, manufacture of	Apr. 17, 1866.
53,117	Cornelius, Robert	....do	Pumps for deep wells	Mar. 13, 1866.
54,300	Same	....do	Pumps for deep wells	May 2, 1866.
54,867	Same	....do	Pumps, sand	May 22, 1866.
55,822	Same	....do	Pumps for deep wells	June 26, 1866.
52,971	Cornell, George W., and Bernard B. Quinn	New York N. Y	Pipe mould	Mar. 6, 1866.
59,189	Cornell, John B	....do	Safes	Oct. 30, 1866.
52,807	Cornell, Thomas J.	Decatur, Ill	Ploughs	Feb. 20, 1866.
54,693	Same	....do	Ploughs, gang	May 15, 1866.
58,384	Same	....do	Ploughs, gang	Oct. 2, 1866.
59,971	Cornwall, Nathaniel E.	New York, N. Y	Stove-pipes, heat radiating, attachment for	Nov. 27, 1866.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,117	Corpe, William F	Windsor Locks, Conn	Jars, fruit	Apr. 24, 1866.
	Corrister, W. D., and Susan Knox. (*See* Knox & Corrister.)			
60,620	Cortes, Eusebio, assignor to José A. Mora	Cuba	Planter, sugar-cane	Dec. 18, 1866.
	Cortright, Levi, and J. J. Meeker. (*See* Meeker & Cortright.)			
52,539	Cottman, Thomas	Cincinnati, Ohio	Ploughs	Feb. 13, 1866.
59,892	Cotton, William	England	Knitting machines	Nov. 20, 1866.
	Cottrell & Babcock. (*See* Carmichel & Barney, assigors.)			
55,004	Cottrell, C. B., assignor to self and Nathan Babcock	Westerly, R. I	Steel, apparatus for tempering	May 22, 1866.
55,245	Cottrell, George G	Sharon, Conn	Traps, animal	June 5, 1866.
52,242	Cottrell, Isaac B., assignor to self and Marcus D. Ball	South Orange, N. J	Fastening, sash	Jan. 23, 1866.
	Coueh, Joseph J	Brooklyn, N. Y	Drilling stones, machine for (Extension)	Nov. 6, 1866.
58,608	Coughlin, William	Baltimore, Md	Soda fountains	Oct. 9, 1866.
53,951	Coult, Joseph C., and John Roach	San Francisco, Cal	Metals, volatile, from ores, apparatus for separating	Apr. 17, 1866.
56,378	Same	do	Ores, apparatus for treating	July 17, 1866.
57,093	Contarel, Dominique E	New York, N. Y	Disinfecting bone-boiling establishments, mode of	July 31, 1866.
	Coulter, H. (*See* Conrad, Ernst, assignor.)			
60,145	Covell, E. Hall	New York, N. Y	Pumps, centrifugal	Dec. 4, 1866.
52,972	Covell, Edward T	Brooklyn, N. Y	Cans, sheet metal	Mar. 6, 1866.
56,014	Covell, William W., jr	New York, N. Y	Pockets, watch, safety	July 3, 1866.
57,624	Covert, Henry H., assignor to self and Smith R. Woolley	Detroit, Mich	Cars, starting	Aug. 28, 1866.
	Covert, H. W., and James Sargent. (*See* Sargent & Covert.)			
	Covert, H. W., and A. G. Burton. (*See* Burton & Covert.)			
52,540	Covington, J. W. B	New York, N. Y	Socks, paper	Feb. 13, 1866.
59,365	Covington, Richard	Washington, D. C	Hinges, shutter	Nov. 6, 1866.
53,379	Cowan, B. F	New York, N. Y	Stove-pipe damper	July 17, 1866.
56,720	Cowell, John J	Chicago, Ill	Trunk brace and hinge	July 31, 1866.
2,282	Cowing, George	Seneca Falls, N. Y	Cylinder polisher (Reissue)	June 12, 1866.
	Cowles, C., & Co. (*See* Blakeslee, Edwin, assignor.) Design.			
	Same. (*See* Downs, James H., assignor.) Design.			
53,753	Cowper, Edward Alfred	Great Britain	Gins, cotton	Apr. 3, 1866.
51,927	Cox, Alexander S	Washington, D. C	Indicator, railroad station	Jan. 9, 1866.
53,952	Cox, E	Point Pleasant, Ohio	Churn-top	Apr. 17, 1866.
	Cox, Edwin, *et al.* (*See* Taylor & Cox.)			
	Cox, Franklin F., and Orlando Barr. (*See* Barr & Cox.)			
54,694	Cox, Richard	Philadelphia, Pa	Tongs, pipe	May 15, 1866.
52,507	Cox, Thomas H	Nashville, Tenn	Shingle mills	Feb. 6, 1866.
	Cox, W. B., and R. Hasket. (*See* Hasket & Cox.)			
58,988	Cox, W. H	Virden, Ill	Planters, corn	Oct. 23, 1866.
2,476	Coy, Henry	Philadelphia, Pa	Dentists' grinding lathe (Design)	Oct. 2, 1866.
53,418	Cozad, Elias	East Cleveland, Ohio	Fences	Mar. 27, 1866.
51,805	Craft, David W	New York, N. Y	Salve	Jan. 2, 1866.
52,112	Crafts, Samuel P., assignor to O. B. North & Co	New Haven, Conn	Buckle	Jan. 16, 1866.
53,118	Craig, Isaac E	Cleveland, Ohio	Steam generator for heating purposes	Mar. 13, 1866.

	Craig, William, and Alexander M. Lesley. (*See* Lesley & Craig.) Same.			
57,292	Craige, E. H	Brooklyn, N. Y	Hanging pitmans, &c., mode of	Aug. 21, 1866.
53,119	Craigie, Hugh	New York, N. Y	Water-closets	Mar. 13, 1866.
58,780	Cram, John	Chicago, Ill	Wringing and washing machines, shaft for rubber, rollers for	Oct. 16, 1866.
53,579	Crandall, Delos V	Canton, Iowa	Bed springs	Apr. 3, 1866.
52,141	Crandell, Jesse A	New York, N. Y	Sleds for children	Jan. 23, 1866.
	Crandell, John, and George R. Osborn. (*See* Osborn & Crandell.)			
	Crandell, L., and H. L., *et al.* (*See* Taylor, Crandall & Larkin.)			
	Crane, Charles S. (*See* Cross, Christopher G., assignor.)			
55,823	Crane, Elliott H	Burr Oak, Mich	Bell, door, and burglar alarm	June 26, 1866.
	Crane, James. (*See* Battley, Edwin, assignor.)			
52,270	Crane, John E	Lowell, Mass	Wool dryers, screen for	Jan. 30, 1866.
	Crane, John E., *et al.* (*See* Lawrence, Alvin, assignor.) Same.			
57,870	Crane, John E., and Jesse Fox	Lowell, Mass	Projectiles, compound. (Antedated September 5, 1866)	Sept. 11, 1866.
55,412	Crane, L. L., assignor to Leavitt, Crane & Co	Cleveland, Ohio	Lathes	June 5, 1866.
58,223	Crane, L. M	Ballston Spa, N. Y	Collars, paper	Sept. 25, 1866.
55,625	Crane, Moses G	Boston, Mass	Egg-beater	June 19, 1866.
59,366	Same	Chelsea, Mass	Ice-cream freezer	Nov. 6, 1866.
2,228	Crane, Thomas	Fort Atkinson, Wis	Stump extractor (Reissue)	Apr. 17, 1866.
54,118	Crane, William, and Warren H. Peaso	Goshen, Ind	Photographic purposes, arrangement of solar mirror for. (Antedated April 16, 1866.)	Apr. 24, 1866.
51,806	Crans, L. J	Philadelphia, Pa	Well-boring machine	Jan. 9, 1866.
53,953	Crans, Peter, jr	do	Lamp burners. (Antedated April 3, 1866)	Apr. 17, 1866.
59,823	Crate, Joseph V. C	Waterbury, Conn	Punching presses, rods for	Nov. 20, 1866.
55,824	Craven, Thomas C	Albany, N. Y	Hay forks, horse	June 26, 1866.
56,684	Same	do	Gins, cotton, saws for	July 24, 1866.
2,192	Craven, Thomas C., assignor to self and William H. Davis	do	Hay spreader and elevator, combined (Reissue)	Mar. 13, 1866.
58,338	Crawford, A. B., assignor to self, J. O'Ferrall, and T. L. Daniels	Piqua, Ohio	Threshing machine	Sept. 25, 1866.
56,380	Crawford, Benjamin	Alleghany, Pa	Pumps for deep wells	July 17, 1866.
55,065	Crawford, Clay	East Cleveland, Ohio	Grates, coal, open	May 29, 1866.
53,419	Crawford, Elmer, and James H. Birch	Burlington, N. J	Carriage curtain fastener	Mar. 27, 1866.
57,871	Crawford, John M	New Castle, Ky	Ploughs, garden	Sept. 11, 1866,
54,119	Crawford, Peter S	Union, Ill	Fence, wire, device for tightening	Apr. 24, 1866.
56,186	Crawley, John	Perrysville, Ind	Valves, stop, governor	July 10, 1866.
	Cresson, G. V., *et al.* (*See* Smith, Scott A., assignor.)			
57,094	Crick, Francis	Beamesville, Ohio	Carriages, running gear of	Aug. 14, 1866.
	Crider, John J., and George Stevenson. (*See* Stevenson & Crider.)			
	Crichfield, A. R., and Jacob H. Beidler. (*See* Beidler & Crichfield.)			
53,954	Crimmins, John	Detroit, Mich	Stove-pipe drum	Apr. 17, 1866.
	Crippin, F. B. (*See* Brooks, Willard P., assignor.)			
2,238	Crispin, Silas	New York, N. Y	Fire-arms, revolving (Reissue)	May 8, 1866.
55,825	Crissey, F. J	Leesburg, Va	Churns	June 26, 1866.
55,066	Crist, John L	Harrisburg, Pa	Wrenches, screw	May 29, 1866.
58,224	Crocker, Anson D	Boston, Mass	Kettles and other vessels, bail for	Sept. 25, 1866.
54,868	Crocker, D. W	Deposit, N. Y	Railway chair	May 22, 1866.
57,872	Crocker, Samuel	Oakland, Iowa	Fence	Sept. 11, 1866.
60,342	Crocker, Silas S., assignor to self and D. R. Crocker	Maquoketa, Iowa	Borers, tap	Dec. 11, 1866.
60,482	Crockett, David T	Newark, N. J	Hammers	Dec. 18, 1866.
58,989	Crockett, S. L., and Benjamin T. Mills	Lowell, Mass	Carding engines, machine for stripping the top flats of	Oct. 23, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,385	Croko, John	Holmesville, Ohio	Drills, potato	Oct. 2, 1866.
54,474	Croft, J. McGrigor	Great Britain	Rudder	May 1, 1866.
58,781	Croley, Charles	Dayton, Ohio	Ladder	Oct. 16, 1866.
58,539	Croll, I. S., assignor to self and Quartus Rice	North San Juan, Cal	Quartz crushers	Oct. 2, 1866.
	Crombie, A. D., *et al.* (*See* Colborn, Wells L., ass'r.) Reissue.			
	Same.			Jan. 9, 1866.
51,928	Crompton, George	Worcester, Mass	Looms, fancy	July 17, 1866.
56,381	Same	....do	Fabric, woven	Nov. 27, 1866.
59,972	Same	....do	Looms, harness motion for	Jan. 23, 1866.
2,150	Crondal, A. C	New York, N. Y	Hats, cork (Reissue)	Feb. 27, 1866.
	Crondal, A. C. (*See* Breinig, David E., assignor.)			
52,824	Cronk, James E	Poughkeepsie, N. Y	Water elevators	May 22, 1866.
54,869	Cronk, M. C	Auburn, N. Y	Chair	Apr. 24, 1866.
	Crook, C., and A. Blomquist. (*See* Blomquist & Crook.)			Apr. 24, 1866.
54,120	Crooke, Lewis and Robert	New York, N. Y	Rod, solder, compressed	Mar. 13, 1866.
54,121	Same	....do	Rod, solder, machine for the manufacture of	May 15, 1866.
53,120	Crookes, Joseph	St. Louis, Mo	Saw-grinding machine	Dec 11, 1866.
54,829	Crookes, William	England	Gold and silver from ores, method of separating	Sept. 11, 1866.
	Crosby, Joseph, and J. W. Branch. (*See* Milligan, John F., ass'r.)			Nov. 20, 1866.
60,343	Crosby, A. C	Union, Pa	Watches, tools for setting jewels in	Mar. 6, 1866.
57,873	Crosby, C. O	New Haven, Conn	Wires, machine for pointing	Aug. 21, 1866.
59,893	Crosby, C. O., assignor to the Fish Hook and Needle Company	....do	Fish hooks	July 31, 1866.
2,188	Crosby, C. O., and H. Kellogg, ass'rs to the Elm City Company	....do	Trimmings, tape, manufacture of (Reissue)	May 15, 1866.
57,293	Crosby, Francis W., and Woodhull Helm	New York, N, Y	Ores, apparatus for desulphurizing	Feb. 20, 1866.
56,721	Crosby, J. B	Boston, Mass	Raisin seeder	Aug. 14, 1866.
	Crosley, Wm. A., *et al.* (*See* Peeler, Abner, assignor.)			July 31, 1866.
54,695	Crosman, Charles	Tompkinsville, N. Y	Brushes, hair, folding	Feb. 20, 1866.
52,783	Cross, Christopher G., assignor to self and Charles S. Crane	Chicago, Ill	Screw-cutting dies	
	Cross, James E., *et al.* (*See* Westlake, William, ass'r.) Reissue.			
	Same.			Aug. 14, 1866.
57,095	Cross, James P	Watertown, N. Y	Fluid, burning	
	Cross, John D. (*See* Rowley, Sloan, and Woodruff, assignors.)			July 31, 1866.
56,722	Cross, John G	Brattleboro', Vt	Racks, milk and cheese	Feb. 20, 1866.
52,686	Cross, Richard	Providence, R. I	Watch key and toggle combined	Feb. 20, 1866.
52,687	Same	....do	Watch key, tooth pick, and toggle combined	Aug. 14, 1866.
57,096	Cross, W. R. P	Portland, Maine	Curtain fixtures	Feb. 20, 1866.
52,688	Crossley, Charles	Philadelphia, Pa	Mill picks	May 22, 1866.
54,870	Crossley, James W	Bridgeport, Conn	Fabrics, pile, mode of making	Feb. 27, 1866.
52,825	Crossley, Thomas, ass'r to the American Water Proof Cloth Co	....do	Carpets and other purposes, fabric for	Oct. 9, 1866.
58,716	Crossman, C. P., assignor to self and Pembroke Churchill	West Warren, Mass	Pen rack and bill holder	
	Crossman, S., and A. J. Stafford. (*See* Stafford & Crossman.)			Mar. 13, 1866.
53,121	Crossman, Stephen H	Battle Creek, Mich	Bed bottom	May 8, 1866.
54,508	Crouch, P. F	New York, N. Y	Shears	Mar. 27, 1866.
53,524	Crow, Charles, assignor to self and James Hollingsworth	Onargo, Ill	Trammels for ellipses	Aug. 28, 1866.
57,625	Crowe, George W., assignor to self and Benjamin Martin	Cincinnati, Ohio	Wagon brakes	

53,955	Crowell, George G	Lime Rock, Conn	Fire-arms, revolving	Apr. 17, 1866.
58,990	Samo	....do	Springs, hardening	Oct. 23, 1866.
	Crowell, Jackson R., and John Lynn. (*See* Lynn & Crowell.)			
59,190	Crowell, John B	Newport, N. H	Stanchions for cattle	Oct. 30, 1866.
58,717	Crowell, Solomon, assignor to self and James B. Rue	Syracuse, N. Y	Stove-pipe, connecting and supporting	Oct. 9, 1866.
59,973	Crawfoot, Joseph, assignor to self, J. T. and W. Gill	Worcester, Mass	Spinning machines	Nov. 27, 1866.
55,200	Crowl, Peter, assignor to self and H. H. Finley	Brownsville, Pa	Vice	May 29, 1866.
51,995	Crowley, John B., assignor to self and Chamberlain & Company	Cincinnati, Ohio	Moulders' clamp	Jan. 9, 1866.
53,732	Crowley, John B., assignor to Chamberlain & Company	....do	Stoves, cooking	Apr. 3, 1866.
59,894	Crowley, John B., assignor to self and Chamberlain & Company	....do	Stoves, hot-water reservoirs for	Nov. 20, 1866.
52,271	Crowner, John	Wellsville, N. Y	Stump extractor	Jan. 30, 1866.
60,483	Crum, Isaac	Port Union, Ohio	Planters, corn	Dec. 18, 1866.
60,146	Cruchfield, W. G., assignor to self and James O. Altiek	Dayton, Ohio	Pumps, force	Dec. 4, 1866.
	Crozier, Andrew, and Edward Curtis. (*See* Curtis & Crozier.)			
	Cudworth, Jesse. (*See* Worrall, John, assignor.)			
58,991	Culver, A. M	Bedford, Ohio	Sheep, table and holder for shearing	Oct. 23, 1866.
55,246	Culver, C. N	Bowling Green, Ohio	Hay forks, horse	June 5, 1866.
51,807	Culver, Horace	Richfield, Ohio	Jack, lifting	Jan. 2, 1866.
53,388	Cumming, David, jr	New York, N. Y	Mangle and wringer	Apr. 3, 1866.
58,225	Same	....do	Slate frames	Sept. 25, 1866.
	Cumming, David, jr., and Horatio Bateman. (*See* Bateman & Cumming.)			
56,015	Cummings, Daniel M	Enfield, N. H	Stove, heating	July 3, 1866.
52,034	Cummings, E. N	Colebrook, N. H	Traps, fly	Jan. 16, 1866.
58,782	Same	....do	Stove, heating. (Antedated October 4, 1866)	Oct. 16, 1866.
	Cummings, James. (*See* Morris, Augustus T., assignor.)			
59,561	Cummings, Perley D	Portland, Pa	File blanks, machine for rolling	Nov. 13, 1866.
58,992	Cummings, Porter E	Sanford, Maine	Knife carrier	Oct. 23, 1866.
59,760	Cummings, Uriah	Buffalo, N. Y	Lime kilns	Nov. 20, 1866.
	Cummings, Wm. D., and Nicholas Taliaferro. (*See* Taliaferro & Cummings.)			
52,826	Cunningham, Frank	Chicago, Ill	Collars, horse, machine for forming	Feb. 27, 1866.
53,276	Cunningham, Robert	....do	Ankle supporter	Mar. 20, 1866.
	Currie, John, *et al.* (*See* Martin, Beesley, & Currie.) Design.			
	Same			
	Same			
	Same			
58,783	Currie, J. M	Washington, Iowa	Projectiles for ordnance	Oct. 16, 1866.
	Currie, Albert E., and Samuel Vanee. (*See* Marden, J. A., ass'or.)			
55,005	Currier, John J., assignor to self and James H. Plaisted	Boston, Mass	Collars, paper, machines for folding	May 22, 1866.
60,484	Currier, John J., and Samuel Wells, jr., assignors to selves and James H. Plaisted.	Boston, Mass	Collars, paper, apparatus for finishing and boxing	Dec. 18, 1866.
51,808	Curtis, Andrew J	Winterport, Maine	Carriage wheels	Jan. 2, 1866.
57,482	Curtis, A. J, D. J. Roberts, and W. Curtis	Savanville, Maine; ....do; Monroe, Maine	Rakes, horse	Aug. 28, 1866.
52,973	Curtis, Edward, and Andrew Crozier	Ithaca, N. Y	Roofing cement	Mar. 6, 1866.
51,929	Curtis, Francis	Malden, Mass	Paper, rolls for pressing, sizing, and calendering	Jan. 9, 1866.
58,019	Curtis, George B., assignor to P. K. Bronson	Woleott, N. Y	Water elevators	Sept. 11, 1866.
	Curtis, George S., *et al.* (*See* Tripp, Thomas, assignor.)			
	Curtis, George S., and Thomas Tripp. (*See* Tripp & Curtis.)			
	Same			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,062	Curtis, George S., and Thomas Tripp, assignors to selves, E. G. L. Faxon, and H. S. Dodge.	Chicago, Ill	Amalgamator	Apr. 17, 1866.
51,122	Curtis, H. W	Worcester, Mass	Cultivators	Apr. 24, 1866.
57,483	Curtis, H. W	Lockport, Ill	Mills, fanning	Aug. 28, 1866.
	Curtis, J. (*See* Kohly, Henry, jr., assignor.)			
59,367	Curtis, John B	Port Henry, N. Y	Table, extension	Nov. 6, 1866.
57,248	Curtis, Philip B., assignor to self and Albert P. Sawyer	Amesbury, Mass	Whiffletrees	Aug. 14, 1866.
52,784	Curtis, Theodore A., assignor to G. W. Ray and V. N. Taylor	Springfield, Mass	Shirt bosoms, paper	Feb. 20, 1866.
53,790	Curtiss, Samuel, jr	Williamsburg, N. Y	Medicines, apparatus for administering	Apr. 10, 1866.
	Cushing, George W. (*See* Anderson, Horatio, assignor.)			
54,509	Cushing, H. S	Blossburg, Pa	Scale beams	May 8, 1866.
	Cushing, Levi L., jr., *et al.* (*See* Halvorson, Halvor, assignor.)			
60,621	Cushing, T. H	Dover, N. H	Sawing machines	Dec. 18, 1866.
55,201	Cushing, Wm. T., assignor to Sanford Harroun & Co	New York, N. Y	Printing railroad tickets, machinery for	May 29, 1866.
54,123	Cushman, Dwight	Hartford, Conn	Water wheels	Apr. 24, 1866.
	Cushman, Francis A. (*See* Reynolds, George S., assignor.)			
52,541	Cushman, S. D	New Lisbon, Ohio	Lightning rods	Feb. 13, 1866.
	Cushman, S. D., *et al.* (*See* Shawk, Morley, & Cushman.)			
55,472	Custer, Jacob, and Charles Rowland	Clinton, Ill	Plough coulters	June 12, 1866.
55,826	Custer, John	Sandusky, Ohio	Cultivators	June 26, 1866.
55,827	Custer, Samuel	Salem, Va	Compasses, marine	June 26, 1866.
56,670	Cutler, Alexander, assignor to Charles H. Hayward	Malden, Mass	Rubber, India, in connection with leather, process for vulcanizing	July 24, 1866.
59,974	Cutler, Alpheus	Pittston, Pa	Table-leaf support	Nov. 27, 1866.
59,562	Cutter, Ephraim	Woburn, Mass	Anæsthetic instruments, dental	Nov. 13, 1866.
52,689	Cutter, William H	St. Louis, Mo	Vices for carpenter's benches	Feb. 20, 1866.
53,956	Cutting, Lewis	San Francisco, Cal	Pea and bean shellers	Apr. 17, 1866.
58,226	Same	do	Spinning machine, stop motion for	Sept. 25, 1866.
56,906	Dable, John	Chicago, Ill	Unloading railroad cars, machinery for	Aug. 7, 1866.
55,247	Daggett, Lyman	Boston, Mass	Sole, inner	June 5, 1866.
	Dahis, Florian, and Henry B. Voss. (*See* Robitaille, Charles, assignor.)			
59,097	Dailey, James	Albany, N. Y	Liquid measures	Aug. 14, 1866.
56,723	Dailey, P. A	New York, N. Y	Mirror	July 31, 1866.
59,975	Dake, Daniel W	Brooklyn, N. Y	Butter, method of preparing coloring matter for	Nov. 27, 1866.
55,248	Dalbey, Reuben M	Springfield, Ohio	Jar, fruit	June 5, 1866.
58,609	Dale, Henry	Philadelphia, Pa	Looms	Oct. 9, 1866.
57,264	Dale, John	England	Pigments, manufacture of	Aug. 14, 1866.
52,827	Dale, John D	Rochester, N. Y	Drill, rock	Feb. 27, 1866.
	Daley, John, and E. E. Packer, jr. (*See* Packer & Daley.)			
58,386	Dalton, H. N	Pacheco, Cal	Ploughs, gang	Oct. 2, 1866.
58,610	Dalton, J	Williamsburg, N. Y	Knitting machines	Oct. 9, 1866.
56,849	Daltry, David, assignor to self and John Parker	Philadelphia, Pa	Rod coupling. (Antedated July 13, 1866)	July 31, 1866.
53,420	Daley, John J	New Orleans, La	Measuring distances, instruments for	Mar. 27, 1866.
51,930	Dam, Lorenzo C., and John Wigley	Lowell, Mass Milford, N. H.	Males, self-acting	Jan. 9, 1866.

58,227	Damerell, William	Brooklyn, N. Y	Umbrella	Sept. 25, 1866.
58,611	Damon, Alexander M	Lowell, Mass	Warp-dressing frames	Oct. 9, 1866.
53,372	Danby, John, assignor to James Grower	New York, N. Y	Weaving a covering for cords, machine for	Mar. 20, 1866.
	Dane, James F., *et al.* (*See* Westlake, Wm., assignor.) Reissue. Same.			
55,006	Dane, Joseph, jr., assignor to W. J. and W. U. Dudley	Newark, N. J	Wood, machine for shaping. (Antedated May 16, 1866)	May 22, 1866.
57,874	Daniel, Cary K. and S. F	Covington, Ky	Roofing, composition for	Sept. 11, 1866.
57,484	Daniel, Charles	Lamonte, Mo	Cultivators	Aug. 28, 1866.
	Daniel, Willie. (*See* Christman, Thomas F., assignor.)			
	Daniels, Charles W. (*See* Ross & White, assignors.)			
	Daniels, Charles W. (*See* Taylor, H. L., assignor.)			
59,368	Daniels, Henry A	Thomaston, Conn	Sawing machines	Nov. 6, 1866.
53,957	Daniels, P	Jackson, Mich	Tire tightener	Apr. 17, 1866.
	Daniels, Reuben	Woodstock, Vt	Fuel, granular, from brushwood and twigs, manufacture of. (Extension.)	June 13, 1866.
	Daniels, T. L., *et al.* (*See* Crawford, A. B., assignor.)			
60,147	Dann, H. D	Waupun, Wis	Seeding machines	Dec. 4, 1866.
	Dann, Isaac N. (*See* Greenleaf, J. H., assignor.)			
52,488	Dann, Isaac N., assignor to the New Haven Folding Chair Co	New Haven, Conn	Chair, folding	Feb. 6, 1866.
57,294	Dann, Jesse W	Columbus, Ohio	Carriage thills, bending	Aug. 21, 1866.
58,993	Dann, Obed	Janesville, Wis	Seed sower, hand	Oct. 23, 1866.
52,974	Danner, John	Canton, Ohio	Coat and hat hook	Mar. 6, 1866.
53,791	Same	....do	Broom head	Apr. 10, 1866.
57,875	Danner, John and Samuel	....do	Bed bottoms, spring	Sept. 11, 1866.
53,228	Danzenbaker, Francis	Bridgeton, N. J	Churns	Sept. 25, 1866.
57,626	Darby, Joseph, assignor to self and Stephen Brewer	Cortlandville, N. Y	Roofing cement	Aug. 28, 1866.
57,435	Darker, William, assignor to self and Josiah B. Thompson	West Philadelphia, Pa	Braiding machine	Aug. 21, 1866.
51,931	Darling, Samuel	Bangor, Maine	Inkstand	Jan. 9, 1866.
52,785	Darlington, J. H., assignor to Joseph R. and Frederick A. Blossom	New York, N. Y	Collars, paper, apparatus for pressing	Feb. 20, 1866.
	Darman, William. (*See* Witsil, George L., assignor.)			
	Darnstaedt, Clemens. (*See* Pratt, Milon, assignor.)			
54,301	Darrow, Frank E	Bristol, Conn	Dolls, process for manufacturing	May 1, 1866.
52,142	Darrow, Frank E., and Dron E. Peck	....do	Toys and dolls	Jan. 23, 1866.
56,187	Darrow, George P	Cincinnati, Ohio	Composition for moulders' match plates	July 10, 1866.
57,436	Darrow, George P., assignor to self and Joseph Hargrave	....do	Plough elevis	Aug. 21, 1866.
	Dart, Henry C., and Edward. (*See* Behrens, Henry I., assignor.)			
59,191	Daugherty, John C	Bridgeport, Ky	Ploughs, shovel	Oct. 30, 1866.
	Daughlish, John, and Robert L. Howard. (*See* Howard & Daughlish.)			
54,696	Daum, John A	Canton, Ohio	Fruit gatherers	May 15, 1866.
58,612	Davenport, F. S	Jerseyville, Ill	Ploughs, gang	Oct. 9, 1866.
54,697	Davey, Thomas	Houghton, Mich	Ore separator, or jigging machine	May 15, 1866.
60,622	Davey, T. N	Jeffersonville, Ind	Steam traps	Dec. 18, 1866.
52,143	Davidson, Edward	Providence, R. I	Anchor tripper	Jan. 23, 1866.
52,392	Same	....do	Chain hook and cable stopper	Feb. 6, 1866.
54,698	Davidson, George	Philadelphia, Pa	Sextants	May 15, 1866.
	Davidson, G. A., and J. Fredenburgh. (*See* Fredenburgh & Davidson.)			
56,725	Davies, John	Baltimore, Md	Furnaces for smelting copper	July 31, 1866.
60,148	Davies, John	Great Britain	Threads or yarns previous to weaving, method of treating	Dec. 4, 1866.
	Davis, A., and J. F. Saiger. (*See* Saiger & Davis.)			
54,871	Davis, Charles F	Auburn, N. Y	Harvester rakes	May 22, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,976	Davis, Charles F., assignor to J. L. Norris and G. R. Neal	New Market, N. H	Oil cups	Nov. 27, 1866.
	Davis, Daniel L., *et. al.* (*See* Richardson, Davis & Howell.)			
60,149	Davis, Franklin	Lawrence, Kansas	Leather, machine for scouring	Dec. 4, 1866.
58,994	Davis, Garet B., and Charles B	Freeport, Ill	Bed bottom	Oct. 23, 1866.
58,718	Davis, George W., assignor to Silas Pratt and E. S. Russell	Fitchburg, Mass	Pavements, &c., compositions for	Oct. 9, 1866.
59,123	Davis, H. V., and G. W. Peabody, assignors to G. W. Peabody and C. B. Tuttle.	Amherst, N. H	Drill, seed	Oct. 23, 1866.
52,690	Davis, Jacob	Oaks, Wis	Corn shellers	Feb. 20, 1866.
54,302	Davis, Jacob S	La Porte, Ind	Vine, grape, protectors	May 1, 1866.
58,613	Davis, James	Loami, Ill	Roller and harrow, combined	Oct. 9, 1866.
60,485	Davis, James	Buffalo, N. Y	Saw mills	Dec. 18, 1866.
60,486	Same	....do	Saw mills	Dec. 18, 1866.
	Davis, James, *et al.* (*See* Magrowitz, William, assignor.)			
56,724	Davis, James N	Cincinnati, Ohio	Water-closets	July 31, 1866.
58,784	Davis, James Warren	Washington, D. C	Paper, wall, device for hanging	Oct. 16, 1866.
58,614	Davis, Job A	Great Bend, Pa	Sewing machines, needle feed of	Oct. 9, 1866.
55,067	Davis, John	Allegheny, Pa	Car brake	May 29, 1866.
53,123	Davis, John, 2d	Lake Village, N. H	Churns	Mar. 13, 1866.
59,790	Same	....do	Churns	Nov. 20, 1866.
54,124	Davis, John M	St. Louis, Mo	Mowing machines, track clearers for	Apr. 24, 1866.
52,691	Davis, John Q	Salem, N. J	Can, milk	Feb. 20, 1866.
55,626	Davis, Joseph H	Allegheny, Pa	Pumps for deep wells	June 19, 1866.
56,382	Davis, Joshua	Schenectady, N. Y	Egg beaters	July 17, 1866.
52,393	Davis, L. L	Laconia, N. H	Bolt heading machines	Feb. 6, 1866.
53,277	Davis, M. C	Guilford, Ohio	Sheep, machine for shearing	Mar. 20, 1866.
53,792	Davis, N. A	Sutton, N. H	Harrows	Apr. 10, 1866.
56,726	Davis, Nicholas L., and Robert O. Hewitt	Rutland, Vt	Railway chairs	July 31, 1866.
	Davis, P., and A. Taylor. (*See* Tufts, Timothy, assignor.)			
54,063	Davis, Robert W., and Daniel, assignors to selves and John H. Livingston	Flushing, N. Y Long Island City, N. Y	Steam generators	Apr. 17, 1866.
54,064	Davis, Robert W., and Daniel, assignors to selves and John H. Livingston	Flushing, N. Y Long Island City, N. Y	Grate for furnaces, &c	Apr. 17, 1866.
57,876	Davis, Samuel, and Windsor Leland	Chicago, Ill	Slaughtering purposes, clutch hook for	Sept. 11, 1866.
	Davis, Sidney M., and James R. Street. (*See* Street & Davis.)			
	Davis, Sylvester. (*See* Webster, Horace H., assignor.)			
	Davis, Sylvester. (*See* Fletcher, Benjamin S., assignor.)			
52,975	Davis, S. W	Plattsburg, N. Y	Horse-power	Mar. 6, 1866.
	Davis, T. M., *et al.* (*See* Martin, B. G., assignor.)			
	Davis, W. C., & Co. (*See* Batchelor, Solomon C., assignor.)			
56,907	Davis, William Edward	Jersey City, N. J	Propeller, screw	Aug. 7, 1866.
	Davis, William H. (*See* Craven, Thomas C., assignor.) Reissue.			
	Davison, N. S. (*See* Cahill, James W., assignor.)			
	Davison, Harriet A. (*See* Newhall, Walter P., assignor.)			
54,699	Daval, William C	Fall River, Mass	Spinning mules	May 15, 1866.
52,940	Dawes, William	England	Organs, harmoniums, &c	Feb. 27, 1866.

53,122	Dawson, E. S	Syracuse, N. Y	Hook, snap	Mar. 13, 1866.
56,532	Dawson, Gilbreth	Rockville, Conn	Spinning jacks	July 24, 1866.
52,976	Dawson, Samuel C	Philadelphia, Pa	Tobacco, composition for treating	Mar. 6, 1866.
54,125	Dawson, Walter	Pottsville, Pa	Car trucks	Apr. 24, 1866.
58,615	Day, Austin G	New York, N. Y	Caoutchouc, artificial. (Antedated September 29, 1866)	Oct. 9, 1866.
58,616	Day, Charles M	Ann Arbor, Mich	Saw, wood, hand	Oct. 9, 1866.
	Day, Edward L. (*See* Whitmore, Nathaniel G., assignor.)			
52,786	Day, Erastus M., and John T. Noel, assignors to H. Winchester and E. M. Day.	Lower Lake, Wis	Presses, hay and cotton	Feb. 20, 1866.
2,298	Day, Franklin O., and William S. Stewart	St. Louis, Mo	Trade-mark (Design)	May 1, 1866.
2,299	Same	do	Trade-mark (Design)	May 1, 1866.
2,300	Same	do	Trade-mark (Design)	May 1, 1866.
	Day, George E. H. (*See* Bacon, A. M., assignor.)			
53,124	Day, George W	Charlestown, Mass	Shoes, manufacture of pegs for	Mar. 13, 1866.
56,188	Day, Justus	Murray, N. Y	Sheep for shearing, machine for holding	July 10, 1866.
59,977	Same	do	Broom clamp	Nov. 27, 1866.
52,394	Day, Nathan	Itchaca, Ohio	Boot crimp	Feb. 6, 1866.
55,627	Day, Samuel F	Ballston, N. Y	Magnets, sounder	June 19, 1866.
56,629	Day, Theodore D	New York, N. Y	Skirt wire	Feb. 20, 1866.
56,016	Same	do	Skirts, hoop	July 3, 1866.
53,581	Dayton, H. G	Maysville, Ky	Distilling spirits, apparatus for	Apr. 3, 1866.
54,872	Same	do	Stove for railroad cars	May 22, 1866.
56,727	Same	do	Furnace, hot-air	July 31, 1866.
59,563	Same	do	Stoves, coal	Nov. 13, 1866.
59,791	Dayton, Henry G., assignor to self, B. Young, N. C. Morse, and R. B. Wilson.	do	Fuel, artificial, manufacture of	Nov. 20, 1866.
56,189	Deal, George	Wayne township, Ohio	Rakes, horse	July 10, 1866.
58,719	Dean, Chester F., assignor to self, Horace and Halsey R. Paddock, and M. E. Barrett.	St. Johnsbury, Vt	Mills, grinding	Oct. 9, 1866.
	Dean, James. (*See* Parlour, Joseph T., assignor.)			
54,303	Dean, John A	Easton, Mass	Oil from leather, &c., mode of extracting	May 1, 1866.
58,387	Dean, Royal E	New York, N. Y	Table, carving	Oct. 2, 1866.
	Dearborn, Nathaniel. (*See* Adams, Joseph, assignor.)			
55,981	DeBaum, H	Paterson, N. J	Fastening, sash	July 3, 1866.
54,126	DeCamp, M	South Bend, Ind	Grain feeder, revolving	Apr. 24, 1866.
	Decker, A. M. (*See* Traphagan, George W., assignor.)			
57,249	Decker, John, assignor to self and Thomas W. Wardwell	Sparta, N. J	Bolt, slide	Aug. 14, 1866.
60,657	Decker, Levi	New York, N. Y	Billiard tables, cushions for	Dec. 18, 1866.
55,628	Decker, Lewis P	Brooklyn, N. Y	Bridge, ferry, gates	June 19, 1866.
58,073	Decker, Nicholas C	St. Louis, Mo	Rakes, horse	Sept. 18, 1866.
56,728	Deckman, George	Malvern, Ohio	Churn dasher	July 31, 1866.
53,582	DeCoursey, John G	Philadelphia, Pa	Bullets for small-arms	Apr. 3, 1866.
55,473	Same	do	Mosquito net	June 12, 1866.
52,395	Dederer, Nicholas A	Greene, N. Y	Harvesting machines	Feb. 6, 1866.
52,396	Same	do	Harvester rakes	Feb. 6, 1866.
2,315	Dederick, Levi	Albany, N. Y	Presses, hay (Reissue)	July 19, 1866.
	Dedrick, Charles H., *et al.* (*See* Ferrell, James M., assignor.)			
58,388	Dedrick, Charles M	Temperanceville, Pa	Bottles, soda-water, apparatus for removing the wire from	Oct. 2, 1866.
51,809	Deering, M. L	New York, N. Y	Annunciator	Jan. 2, 1866.
59,978	DeFiganiero, A	Philadelphia, Pa	Lime, manufacture of super-phosphate of	Nov. 27, 1866.
59,895	De Forest, Thomas B	Birmingham, Conn	Bindings, metallic	Nov. 20, 1866.
59,896	Same	do	Buckles	Nov. 20, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	De Forest, Thomas B. (*See* Woodbury, Oscar D., assignor.)			
58,540	De Forest, Thomas B., assignor to American Press and Clasp Co.	Birmingham, Conn	Skirt, hoops, clasps for	Oct. 2, 1866.
59,711	De Forest, T. B., assignor to J. N. McIntire	Derby, Conn	Skirt, hoop, wire	Nov. 13, 1866.
56,850	Defrees, Rollin, assignor to self and John D. Defrees	Washington, D. C	Pumps, rotary	July 31, 1866.
56,908	Degnon, John	Cleveland, Ohio	Governors	Aug. 7, 1866.
51,810	De Gogorza, Anthoine	New York, N. Y	Paper pulp, material for the manufacture of	Jan. 2, 1866.
59,712	De Graw, Henry N., assignor to self and Henry Wright	Newburg, N. Y	Bootjack	Nov. 13, 1866.
	Deisher, Wm. S., and J. McKnight. (*See* McKnight & Deisher.)			
55,629	Deissner, H. J	Waukesha, Wis	Sirup from corn, making	June 19, 1866.
58,961	De Jong, Servass	Paris, France	Water, purifying and softening	Oct. 16, 1866.
57,912	De Kuhn, A	New York, N. Y	Pianos, sounding-board for	Sept. 11, 1866.
52,144	Delafield, Clarence	Staten Island, N. Y	White lead, manufacture of	Jan. 23, 1866.
52,145	Same	do	Saltpetre, manufacture of	Jan. 23, 1866.
53,583	Same	Factoryville, N. Y	White lead, manufacture of	April 3, 1866.
55,249	Same	do	White lead and saltpetre, manufacture of	June 5, 1866.
	Delameter, Cornelius H. (*See* Page, Edward, assignor.)			
53,733	Delano, William, assignor to self and Walter K. Foster	Bangor, Me	Horseshoe calking vice	April 3, 1866.
54,304	De Lapaturelle, Honore	New York, N. Y	Medical compound	May 1, 1866.
52,397	De Lentilhac, Alfred	Tamaqua, Pa	Fuel, artificial	Feb. 6, 1866.
56,017	Delery, Jules	St. Bernard Parish, La	Low-water detectors	July 3, 1866.
59,713	De l'Homme, Louis, and Angelo Lazzara, assignors to Jos. Arata.	New York, N. Y	Roofing, pavements, &c., cements for	Nov. 13, 1866.
	Delisser, R. L. (*See* Buuting, F. B., assignor.)			
	Delisser, R. L. (*See* De Welsbach, Dr. Aloyse Chevalier Auer, assignor.) Reissue.			
	De Long, Joseph, and Francis E. Ruth. (*See* Ruth & De Long.)			
52,116	De Massas, F. A. E. G	England	Seed, cotton, machine	Jan. 16, 1866.
57,265	De Massey, L. P. R	France	Presses, filter	Aug. 14, 1866.
53,421	Dembors, F. W	East Saginaw, Mich	Boilers for culinary purposes	Mar. 27, 1866.
	Dement, S., and R. B. Summers. (*See* Summers & Dement.)			
51,811	Deming, Levi S	Newington, Conn	Gates, farm	Jan. 2, 1866.
55,828	Dempster, James	Naugatuck, Conn	Carding and picking machines, roller feed for	June 26, 1866.
	De Murguiondo, P. (*See* Hodges, J. Wilson, assignor.) Reissue.			
	De Murguiondo, P. (*See* James, Thomas, assignor.)			
60,487	Denise, S. T	Branch Port, N. J	Railroad switch	Dec. 18, 1866.
60,488	Denison, A. T., and E. P. Furlong	Poland, Me. / Portland, Me.	Wearing apparel made of paper	Dec. 18, 1866.
55,068	Denison, George M	New London, Conn	Washing machine	May 29, 1866.
59,979	Same	do	Washing machines, surfaces for	Nov. 27, 1866.
55,829	Dennett, Daniel	Buxton, Me	Racks, hay, for wagons	June 26, 1866.
60,489	Same	do	Wagons, dumping	Dec. 18, 1866.
55,069	Dennett, Liberty B	Portland, Me	Ploughs	May 29, 1866.
2,353	Denney, Samuel L	Christiana, Pa	Rakes, horse (Reissue)	Sept. 11, 1866.
52,398	Dennis, Henry W., and John Baker	Hopkinton, Mass	Sewing machines, thread-cutter for	Feb. 6, 1866.
54,873	Dennis, Jonathan, jr	Washington, D. C	Screw blanks, machines for turning and pointing	May 22, 1866.
	Dennis, Jonathan, jr., and Thomas J. Thorn. (*See* Thorn & Dennis.)			

60,150	Dennis, Joseph S.	Chicago, Ill	Heaters, sadiron	Dec. 4, 1866.
56,630	Dennis, Paul	Schuylerville, N. Y.	Ploughs, shovel	June 19, 1866.
53,793	Dennison, David	Annisquam, Mass	Washing machine	Apr. 10, 1866.
	Dennison, R. A., *et al.* (*See* Hoard, John W., assignor.)			
58,074	Dennison, William	Washington, D. C	Engines, steam, valve gear for	Sept. 18, 1866.
54,247	Dennisson, John N., assignor to self, Francis H. and Roscoe J. Gould.	Newark, N. J	Fire engines and pump	Apr. 24, 1866.
59,124	Dennisson, John N., assignor to self, Francis H. and Roscoe J. Gould.	Newark, N. J	Pump, air-compressing	Oct. 23, 1866.
59,125	Dennisson, John N., assignor to self, Francis H. and Roscoe J. Gould.	Newark, N. J	Pumps	Oct. 23, 1866.
	Densmore, Byron	New York, N. Y	Harvesters (Extension)	Jan. 30, 1866.
53,794	Densmore, James and Amos	Meadville, Pa	Car for transporting petroleum	Apr. 10, 1866.
2,261	Same	do	Car for transporting petroleum (Reissue)	May 29, 1866.
55,830	Densmore, J., and G. W. N. Yost	Meadville, Pa / Corry, Pa	Car for transporting petroleum	June 26, 1866.
55,831	Densmore, J., and G. W. N. Yost	Meadville, Pa / Corry, Pa	Car for transporting petroleum	June 26, 1866.
55,832	Densmore, J. and A., and G. W. N. Yost	Meadville, Pa / Corry, Pa	Car for transporting petroleum	June 26, 1866.
53,525	Denton, Charles, assignor to self, Samuel E. Barber, and Samuel F. Hawley.	Pekin, Ill	Cultivator and seeding machine	Mar. 27, 1866.
58,720	Denton, Charles, assignor to self, Samuel E. Barber, and Samuel F. Hawley.	Pekin, Ill	Harvesters	Oct. 9, 1866.
	Denton, John, and Henry B. Corner. (*See* Corner & Denton.)			
57,098	Denton, John Wesley	Paris, Ill	Buckle, trace	Aug. 14, 1866.
	Denver, Frank, *et al.* (*See* Berry, Hochholzer & Denver.)			
	Denver, Frank, and Hugo Hochholzer. (*See* Hochholzer & Denver.)			
55,250	Depue, Michael	Mattoon, Ill	Wind power	June 5, 1866.
60,151	De Puy, Alexander T., assignor to R. Hoe & Co	New York, N. Y	Printers' galley	Dec. 4, 1866.
55,251	Derr, Joshua	Oley, Pa	Meat cutter	June 5, 1866.
57,099	Derrington, T	Carbondale, Ill	Spokes, wagon, machines for turning	Aug. 14, 1866.
	Derry, Thomas. (*See* Perry, Charles A., assignor.) Design.			
59,328	De Sincay, L. A. C. St. Paul	Belgium	Sulphur, manufacture of	Oct. 30, 1866.
56,729	Destouy, Augustus	New York, N. Y	Sewing machines for sewing boots and shoes	July 31, 1866.
53,422	De Tar, J. A.	Lanesfield, Kansas	Evaporaters, adjusters for	Mar. 27, 1866.
60,490	Detwiler, Emanuel	Milwaukee, Wis	Stove-pipes, heat radiator for	Dec. 18, 1866.
60,491	Detwiller, Jacob J	Greenville, N. J	Signals, illuminating, igniting	Dec. 18, 1866.
57,684	Deutenberg, F. A	Pittsburg, Pa	Tuyeres	Sept. 4, 1866.
54,305	De Valin, William H	Sacramento, Cal	Cocks, stop	May 1, 1866.
54,127	Devin, George W	Ottumwa, Iowa	Marking stock	Apr. 24, 1866.
54,700	Same	do	Harness snap	May 15, 1866.
52,693	Devines, William	Brooklyn, N. Y	Sifter, drug and spice	Feb. 20, 1866.
53,734	Devines, William, assignor to Howell Smith	do	Corset-busk clasps	Apr. 3, 1866.
2,265	Devins, Thomas	Cambridgeport, Mass	Coffin (Design)	Feb. 20, 1866.
59,564	Devlan, P. S	Jersey City, N. J	Journal boxes, lining for	Nov. 13, 1866.
60,344	Devoe, George W	New York, N. Y	Liquids, measuring	Dec. 11, 1866.
54,128	Devoe, Matthias	Marysville, Kansas	Water-wheels	Apr. 24, 1866.
57,877	Devon, William A	Port Richmond, N. Y	Boats, tackle for raising and lowering	Sept. 11, 1866.
59,824	Same	do	Scaffolds, method of holding and adjusting	Nov. 20, 1866.
56,533	Devos, P. M	New York, N. Y	Medical compound	July 24, 1866.
2,499	De Voursney, A. P	do	Lamp, coach (Design)	Oct. 30, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee	Residence.	Invention or discovery.	Date.
2,500	De Voursney, M.	New York, N. Y.	Lamp, coach (Design)	Oct. 30, 1866.
2,365	De Welsbach, Dr. Aloyse Chevalier Auer, ass'r to R. L. Delisser	....do	Paper, manufacture of (Reissue)	Sept. 25, 1866.
56,730	Dewey, Albert L.	Westfield, Mass.	Sewing machines, feed motion for	July 31, 1866.
56,909	Same.	....do	Sewing machine, stop device for	Aug. 7, 1866.
52,399	Dewey, R. H.	Pittsfield, Mass.	Chimney holders and fastenings	Feb. 6, 1866.
53,584	Dewey, R. H., and E. N. Tillotsen	....do	Wells, reservoirs for	Apr. 3, 1866.
55,252	Dexter, Ellen	Quincy, Ill.	Supporters, abdominal	June 5, 1866.
54,129	Dexter, Thomas B.	Lynn, Mass.	Valves, steam	Apr. 24, 1866.
52,542	Deyo, Calvin B., assignor to self and Edgar B. Skinner	Marengo, Ill.	Cultivators	Feb. 13, 1866.
53,585	De Zung, Henry L.	Geneva, N. Y.	Latches, door	Apr. 3, 1866.
52,146	Dick, Alexander	Buffalo, N. Y.	Cradle. (Antedated January 17, 1866.)	Jan. 23, 1866.
58,617	Dick, Joseph, jr.	Canton, Ohio	Harvesters	Oct. 9, 1866.
	Dickason, J., *et al.* (*See* Dumont, Dupraz & Dickason.)			
	Same.			
57,295	Dickerson, Edward E. and Albert E.	Oshkosh, Wis.	Lantern, railroad switch	Aug. 21, 1866.
53,125	Dickerson, William, and Henry O. Wilbur	Ridgeberry, Pa.	Stump extractor	Mar. 13, 1866.
52,147	Dickey, Clement C.	Philadelphia, Pa.	Flask, powder, charger	Jan. 23, 1866.
53,586	Dickey, Julius C.	New York, N. Y.	Drills, rock	Apr. 3, 1866.
55,070	Same.	....do	Drills, rock	May 29, 1866.
57,485	Same.	Saratoga Springs, N. Y.	Clothes wringers	Aug. 28, 1866.
58,785	Dickinson, D. A.	Baltimore, Md.	Harvesting, husking, and shelling corn, machine for	Oct. 16, 1866.
59,565	Dickinson, J. L.	Dubuque, Iowa.	Engines, steam, valve, device for	Nov. 13, 1866.
58,229	Dickinson, Mahlon D.	Pilesgrove, N. J.	Potatoes, coal, &c., machine for assorting	Sept. 25, 1866.
55,833	Dickinson, Thomas	Newark, N. J.	Planing mouldings, machines for	June 26, 1866.
	Dickinson, Thomas, *et al.* (*See* Goulding, Clark & Dickinson.)			
58,786	Dickinson, Wallace	Brooklyn, N. Y.	Car wheel	Oct. 16, 1866.
52,828	Dickle, Morris	Wellersburg, Pa.	Fence	Feb. 27, 1866.
	Dickson, James C. (*See* Kershaw, John B., assignor.)			
54,130	Dickson, Perry	Jersey City, N. J.	Windlasses, &c., lever power of	Apr. 24, 1866.
56,190	Dieterichs, E. F.	Philadelphia, Pa.	Button-holes	July 10, 1866.
54,306	Dietschy, Joseph	Alton, Ill.	Water and wine cooler	May 1, 1866.
56,018	Dietz, Andrew	New York, N. Y.	Brush and broom, dust. (Antedated June 22, 1866.)	July 3, 1866.
51,812	Dietz, August Theodore	Philadelphia, Pa.	Tobacco pipe. (Antedated October 19, 1865.)	Jan. 2, 1866.
	Dighton Furnace Company. (*See* Fieldhouse, Joseph, assignor.)			
57,296	Dillaway, Hiram	Sandwich, Mass.	Glass press	Aug. 21, 1866.
	Diller, Charles, and Alonzo Sherman. (*See* Sheaffer, John W., ass'r.)			
58,075	Dillior, Joseph	Greensburg, Ind.	Rakes, horse	Sept. 18, 1866.
53,958	Dillman, William P.	Joliet, Ill.	Harvester rakes	Aug. 14, 1866.
57,878	Dills, O. P.	Falmouth, Ky.	Ploughs, wheel	Sept. 11, 1866.
60,152	Dimmick, Charles	Brockport, N. Y.	Spade handles	Dec. 4, 1866.
59,980	Dimock, S. F.	Spencer, Ohio	Traps, animal	Nov. 27, 1866.
	Dinsmore, J. D., and Peter A. La France. (*See* La Franco & Dinsmore.)			
60,345	Dinsmore, John V., assignor to self and M. Harris	Milford, Mass.	Paddle-wheel, feathering	Dec. 11, 1866.
	Dinsmore, Jones T. (*See* Close, W. R., assignor.)			

57,685	Dinsmore, Alonzo R.	Auburn, N. H	Fruit gatherers	Sept. 4, 1866.
58,995	Dinter, Ernest	Boston, Mass	Table	Oct. 23, 1866.
55,028	Dingey, Peter	West Indies	Rudder	May 22, 1866.
55,593	Same	do	Anchor	June 12, 1866.
53,757	Dion, Charles	Montreal, C. E	Alarm, fire	Apr. 3, 1866.
2,409	Same	do	Alarm, fire (Reissue)	Dec. 4, 1866.
53,278	Dishart, Daniel	Canton, Ohio	Washing machine	Mar. 27, 1866.
59,897	Same	do	Washing machine	Nov. 20, 1866.
52,829	Disman, George W	Upper Sandusky, Ohio	Composition for journal boxes	Feb. 27, 1866.
	Disston, Henry. (*See* Baker, John G., assignor.)			
	Same.			
53,279	Dithridge, Edward	Pittsburg, Pa	Bouquet holder	Mar. 27, 1866.
56,383	Dittenhafe, Catharine	Canton, Ohio	Dresses, systems of cutting	July 17, 1866.
	Dittrich, H., *et al.* (*See* Marx, Ernst, assignor.)			
60,153	Diven, Robert	Brooklyn, N. Y	Privy bowls, detachable flanges for	Dec. 4, 1866.
	Divine, Philip E. (*See* Moody, Silas A., assignor.)			
57,686	Divine, Silas R.	New York, N. Y	Air, apparatus for carburetting	Sept. 4, 1866.
55,071	Divine, Silas R., and Charles A. Seely	do	Distilling, apparatus for	May 29, 1866.
56,019	Dixon, Charles, and S. H. Close	Port Byron, N. Y	Gates	July 3, 1866.
54,307	Dixon, John B.	Geneva, N. Y	Tile kilns	May 1, 1866.
51,813	Dixon, John W.	Philadelphia, Pa	Paper pulp, manufactures of	Jan. 2, 1866.
52,543	Same	do	Paper pulp, apparatus for making	Feb. 13, 1866.
52,544	Same	do	Paper pulp, apparatus for making	Feb. 13, 1866.
52,545	Same	do	Paper pulp from wood, straw, &c., making	Feb. 13, 1866.
52,546	Same	do	Paper pulp from wood, straw, and other vegetable fibrous substances, process of making.	Feb. 13, 1866.
52,694	Same	do	Paper pulp, apparatus for the manufacture of	Feb. 20, 1866.
54,308	Same	do	Paper pulp, manufacture of	May 1, 1866.
54,309	Same	do	Paper pulp, process of separating the fibres of palm, palmetto, &c., for the manufacture of.	May 1, 1866.
55,253	Same	do	Wood, process for pulping	June 5, 1866.
55,834	Same	do	Paper pulp, making, for bleaching, and for other purposes, apparatus for.	June 26, 1866.
55,835	Same	do	Paper pulp from wood, straw, and other materials, apparatus for making.	June 26, 1866.
55,836	Same	do	Pulp from wood, straw, and other materials, process of making,	June 26, 1866.
54,510	Dixon, John W., and George Harding	do	Paper pulp, apparatus for the manufacture of	May 8, 1866.
54,511	Dixon, Joseph	New York, N. Y	Planing machine	May 8, 1866.
57,687	Same	do	Galvanic batteries	Sept. 4, 1866.
58,076	Dizmer, John K	Honesdale, Pa	Key seats, machinery for cutting	Sept. 18, 1866.
	Doan, Joseph, and Hiram E. Moon. (*See* Moon & Doan.)			
	Doan, R. E., and Francis Farquhar. (*See* Farquhar & Doan.)			
58,787	Doane, W. W., and W. P. Burr	Brewer, Maine	Barrels, skids for supporting	Oct. 16, 1866.
59,369	Dobbins, Jacob	Waterloo, Mich	Hoops, wooden, machine for bending	Nov. 6, 1866.
55,254	Dobrowsky, A.	Shasta, Cal	Shuttles, tatting	June 5, 1866.
	Doekum, Asbury, and Asa D. Sprague. (*See* Sprague & Doekum.)			
52,272	Dodder, Jacob	Washington, Iowa	Churns	Jan. 30, 1866.
53,959	Dodds, William B.	Cincinnati, Ohio	Locks. (Antedated December 2, 1865)	Apr. 17, 1866.
57,040	Dodds, William B., assignor to self and Neil Macneale	do	Locks, safe	Aug. 7, 1866.
53,960	Dodge, Allen	Georgetown, D. C	Cultivator and seeding machine, combined	Apr. 17, 1866.
56,191	Dodge, Christopher G., jr	Providence, R. I	Hammers, nail	July 10, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Dodge, George H., deceased, by Martha A. Dodge, administratrix.	Bedford, Mass	Spinner, ring. (Extension.)	Jan. 26, 1866.
59,370	Dodge, Hezekiah	Albany, N. Y	Wrenches	Nov. 6, 1866.
52,977	Dodge, H. H	Georgetown, D. C	Boot-blacking apparatus	Mar. 6, 1866.
	Dodge, H. S., *et al.* (*See* Curtis & Tripp, assignors.)			
	Same. (*See* Tripp, Thomas, assignor.)			
	Same. (*See* Tripp & Curtis, assignors.)			
	Same.			
54,310	Dodge, James	Waterford, N. Y	File blanks, flyers, and other metallic articles of small dimensions, machine for rolling, shaping, and forging.	May 1, 1866.
55,837	Dodge, John A	Auburn, N. Y	Harvesters	June 26, 1866.
56,731	Dodge, J. F	Newark, N. J	Wrenches	July 31, 1866.
54,311	Dodge, Levi	Waterford, N. Y	Axes, machinery for hammering heads of	May 1, 1866.
56,732	Same	do	Bleaching paper pulp and drying paper, apparatus for	July 31, 1866.
54,512	Dodge, M. B	New York, N. Y	Quartz crushers	May 8, 1866.
60,154	Same	do	Ore crushers	Dec. 4, 1866.
52,695	Dodge, Omri A	Burlington, Vt	Furnace-door regulator	Feb. 20, 1866.
58,788	Dodge, R. L., and E. M. Walker	Gallatin, Mo	Ploughs, gang and subsoil	Oct. 16, 1866.
55,255	Dodge, S. P	Boston, Mass	Lamp for vehicles	June 5, 1866.
	Dodge, Thomas H. (*See* Hayward, Horace, assignor.)			
	Same			
	Dodge, Thomas H. (*See* Clark, Francis, assignor.)			
	Same. (*See* Taft, George C., assignor.)			
52,547	Dodge, W. C	Washington, D. C	Fire-arms, breech-loading	Feb. 13, 1866.
58,789	Dodge, William C	do	Walks, pavements, &c., composition for	Oct. 16, 1866.
58,790	Same	do	Fire-arms, magazine	Oct. 16, 1866.
56,489	Dodge, William C., and R. D. O. Smith, assignors to W. C. Dodge and W. S. King.	do	Cartridges, machine for filling	July 17, 1866.
59,734	Dodi, Edward	France	Mirrors, metallizing	Nov. 13, 1866.
57,879	Doe, Edson	Newburg, Vt	Valve, throttle, levers	Sept. 11, 1866,
59,981	Dolan, Thomas	Albany, N. Y	Locks to safes, vaults, &c., attaching	Nov. 27, 1866.
53,216	Dole, L. A,, assignor to self and A. R. Silver	Salem, Ohio	Hubs, machines for boring	Mar. 13, 1866.
58,077	Dole, Levi A	do	Tuyeres	Sept. 18, 1866.
	Doll, Arnold, and J. B. Lyon. (*See* Lyon & Doll.)			
52,830	Dolloff, Alpheus	Lake Village, N. H	Diggers, potato	Feb. 27, 1866.
57,688	Donaldson, James W., Daniel Sheets, and Allen C. Miller	Suisun, Cal	Ploughs, gang	Sept. 4, 1866.
53,587	Donlevy, John	New York, N. Y	Printing, typographic	Apr. 3, 1866.
60,346	Donnell, Samuel L	Spring Creek, Tenn	Grading instruments	Dec. 11, 1866.
53,280	Dooling, William L., and David Christman, jr	Zanesville, Ohio	Composition for coating vessels for petroleum, &c. (Antedated March 6, 1866.)	Mar. 20, 1866.
58,389	Doolittle, George W	Lincoln, Ill	Cultivators	Oct. 2, 1866.
52,035	Doolittle, Harrison	East Cleveland, Ohio	Washing machine	Jan. 16, 1866.
58,390	Same	do	Digging potatoes, fork for	Oct. 2, 1866.
54,065	Doolittle, J. B., assignor to self and George O. Downing	New Haven, Conn	Fire-arms, revolving	Apr. 17, 1866.
55,631	Doolittle, T. B	Ansonia, Conn	Fruit boxes	June 19, 1866.

57,880	Dopp, H. W	Buffalo N. Y	Heating and cooking, wick burner for	Sept. 11, 1866.
59,898	Same	....do	Burner, tubular wick	Nov. 20, 1866.
59,899	Dopp, H. W., and C. P. Weiss, assignors to selves and J. Forsyth	....do	Skates	Nov. 20, 1866.
53,795	Doran, Michael W. E	Indianapolis, Ind	Levels, plumb	Apr. 10, 1866.
59,714	Doremus, R. Ogden, assignor to the Elastic Sponge Company	New York, N. Y	Sponge for stuffing mattresses, &c., treating	Nov. 13, 1866.
56,386	Dorer, Henry, and James Storms	Buffalo, N. Y	Elevator bucket	July 17, 1866.
57,100	Dorman, Lathrop	Worcester, Mass	Carriages, axle and journal for	Aug. 14, 1866.
	Dorrel, Cyrus, *et al.* (*See* Read & Dorrel.)			
55,256	Dorsey, Edward L	Union, Ind	Cultivators, field and garden	June 5, 1866.
56,534	Dorsey, Owen	Newark, Ohio	Reaping machines	July 24, 1866.
	Doster, Herman A. (*See* Baum, George L., assignor.)			
53,588	Dotterer, D. H	Philadelphia, Pa	Axle box	Apr. 3, 1866.
	Doty, Edward M. (*See* Ashley, Herman A., assignor.)			
54,701	Doty, Ellis	Janesville, Wis	Washing machines, plug for	May 15, 1866.
59,192	Doty, J. W	Lockport, N. Y	Harvesters, &c., pitman for	Oct. 30, 1866.
55,072	Doty, L. W	Aurora, Ill	Water, rain, cut-off	May 29, 1866.
56,192	Doty, William M	Janesville, Wis	Jacks, wagon	July 10, 1866.
52,273	Doty, W. M., E. P., and Ellis	....do	Washing machine and churn power	Jan. 30, 1860.
56,910	Same	....do	Washing machines	Aug. 7, 1866.
58,391	Doubleday, William E	Brooklyn, N. Y	Hats, making	Oct. 2, 1866.
	Doubleday, W. E., and J. Stewart. (*See* Osborn, William, assignor.) Reissue.			
	Doubleday, W. E., and J. Stewart. (*See* Osborn, William, assignor.) Reissue.			
59,193	Doubler, John W. H	Chicago, Ill	Saw filing machine	Oct. 30, 1866.
52,978	Doudes, Andrew	Canton, Ohio	Roofing, elastic cement for	Mar. 6, 1866.
53,126	Dondna, Knowis W	Milwood Township, Ohio	Strippers, broom corn and sorghum	Mar. 13, 1866.
57,486	Dougherty, Andrew	Brooklyn, N. Y	Printing presses	Aug. 28, 1866.
57,297	Dougherty, Henry F	Monmouth, Ill	Gaiters, Congress, hand-jack for	Aug. 21, 1866.
	Dougherty, J. A. (*See* Corfield, William, assignor.) Same.			
56,384	Dougherty, John B	Rochester, N. Y	Valves, slide	July 17, 1866.
56,385	Same	....do	Valves, slide	July 17, 1866.
56,618	Same	....do	Shingle machines	Oct. 9, 1866.
56,535	Doughty, J. H	New York, N. Y	Blacking case and night chair, combined	July 24, 1866.
58,230	Douglas, Bernard	New York, N. Y	Boot-jack and blacking case	Sept. 25, 1866.
	Douglas, E., Son & Co. (*See* Stobwasser, Gustav, assignor.)			
53,796	Douglas, Frank	Norwich, Conn	Buttons	Apr. 10, 1866.
56,671	Douglas, Joseph W., assignor to W. and B. Douglass	Middletown, Conn	Pumps	July 24, 1866.
57,689	Douglas, Richard A	Chicago, Ill	Brick machine	Sept. 4, 1866.
	Douglass, J., and S. Hurt. (*See* Hurt & Douglass.)			
52,831	Dow, Edwin C	Brooklyn, N. Y	Wells, oil boring tools for	Feb. 27, 1866.
56,536	Dow, Jason	Biddeford, Maine	Tower, signal	July 24, 1866.
53,589	Dow, J. B	Davenport, Iowa	Pens for weaning calves	Apr. 3, 1866.
51,814	Dow, Lorenzo	New York, N. Y	Drills for rock boring	Jan. 2, 1866.
52,148	Same	Piermont, N. Y	Boring and drilling tools. (Antedated January 10, 1866)	Jan. 23, 1866.
55,579	Dowd, Chauncey, assignor to H. W. Gear	New Haven, Conn	Canvas stretcher	June 12, 1866.
	Downer, Albert G. and James Todd. (*See* Todd & Downer.)			
	Downing, George O. (*See* Doolittle, J. B., assignor.)			
54,131	Downing, James	Philadelphia, Pa	Shoe soles, machines for cutting	Apr. 24, 1866.
56,193	Downes, Nicholas	Syracuse, N. Y	Filters	July 10, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Downs & Co.'s Manufacturing Company. (*See* Nichols, B. S., assignor.) Design.			
2,508	Downs, James H., assignor to C. Cowles & Co	New Haven, Conn	Lamp, coach (Design)	Nov. 27, 1866.
57,690	Doyle, Arthur	New York, N. Y	Ships, steam, propeller for	Sept, 4, 1866.
54,513	Doyle, J. E. P.	New York, N. Y	Railway switch	May 8, 1866.
56,733	Drake, Augustus L	Richmond, Maine	Washing machines	July 31, 1866.
56,851	Drake, James B., assignor to Drake, Sill & Hutson	Picture Rocks, Pa	Hay forks, horse	July 31, 1866.
57,691	Drake, John S	New York, N. Y	Legs, artificial	Sept. 4, 1866.
57,437	Drake, Mahlon S., assignor to self and David	Newark, N. J	Hat-ironing machines	Aug. 21, 1866.
	Drake, Mahlon S. and William. (*See* Best & Drake.)			
60,347	Drake, M. T.	Pleasant Ridge, Ohio	Digger, potato	Dec. 11, 1866.
54,132	Drake, Oliver P.	Boston, Mass	Air, apparatus for carburetting	June 26, 1866.
52,548	Draper, Ellwood	Oskaloosa, Iowa	Grate for stoves, revolving	Feb. 13, 1866.
57,816	Draper, John W., assignor to self and Arthur C. Stowell	Wilmington, Del	Railway chair	Sept. 4, 1866.
57,792	Drawbaugh, Daniel	Eberly's Mill, Pa	Faucets	Nov. 20, 1866.
59,793	Same	do	Faucets	Nov. 20, 1866.
57,298	Dreisörner, Jacob	New York, N. Y	Hydraulic engines. (Antedated August 2, 1866)	Aug. 21, 1866.
58,165	Drennan, Charles M., assignor to Wm. P. and Isaac Gannett	Boston, Mass	Egg-beater	Sept. 18, 1866.
58,360	Drescher, Louis, assignor to Gustavus Meyer	Cuba	Pumps	Sept. 25, 1866.
52,274	Drew, A. D	Dixon, Ill	Boots, gaiter, cutting	Jan. 30, 1866.
2,345	Drew, Charles H	Great Falls, N. H	Stove panel (Design)	July 3, 1866.
52,832	Drew, H. C. and J. W	Waterloo, Mich	Carriage wheels	Feb. 27, 1866.
59,194	Drew, James W.	Stockbridge, Mich	Vehicles, wheels	Oct. 30, 1866.
59,195	Drew, Noah	Howell, Mich	Washing machine	Oct. 30, 1866.
60,155	Drew, Reuben W	Lowell, Mass	Lathes, turning	Dec. 4, 1866.
	Drey, S., and M. Rosenheim. (*See* Tonnar, A., assignor.)			
60,156	Driggs, E. F	Brooklyn, N. Y	Sash holder and fastener	Dec. 4, 1866.
54,874	Driggs, Marshall S	do	Hatchway doors	May 22, 1866.
57,299	Driver, John P	Marengo, Iowa	Lamps, fountain	Aug. 21, 1866.
57,881	Drouillard, Oliver	Detroit, Mich	Vessels, sunken, means for raising	Sept. 11, 1866.
55,580	Drown, Otis E., assignor to Darius and Darius L. Goff	Pawtucket, R. I	Braiding machines, carriers of	June 12, 1866.
55,838	Drummond, Alonzo	Newark, N. J	Book, pocket, protectors	June 26, 1866.
58,231	Duane, J. B	Schenectady, N. Y	Chair, reclining	Sept. 25, 1866.
60,157	Dubber, J. F	Brooklyn, N. Y	Springs, manufacture of	Dec. 4, 1866.
53,590	Du Bois, F. N	Black Hawk, Col. Ter	Amalgamating gold, &c., process for	Apr. 3, 1866.
	Du Bois, William B. (*See* Osterhoudt, J., assignor.)			
56,537	Dubree, John	Drumore township, Pa	Strap, hitching	July 24, 1866.
55,839	Duburn, A. M	Chicago, Ill	Lanterns	June 26, 1866.
58,392	Same	do	Lanterns	Oct. 2, 1866.
59,715	Duchemin, William, assignor to self and Sullivan E. Clough	Lynn, Mass	Sewing machines for sewing together the soles and uppers of shoes.	Nov. 13, 1866.
58,721	Duck, John H., and Elias K. Whitcomb, assignors to James T. Whipple	Elgin, Ill	Wells, pipes and fixtures for	Oct. 9, 1866.
51,932	Duckworth, Christopher	Mount Carmel, Conn	Looms for weaving figured fabrics, shuttle-box motion in	Jan. 9, 1866.
2,193	Same	do	Looms, power, division A, reissue	Mar. 13, 1866.

2,194	Duckworth, Chrlstopher	Mount Carmel, Conn	Looms, power, division B, reissue	Mar. 13, 1866.
57,300	Same	....do	Looms, shuttle binders for	Aug. 21, 1866.
52,006	Ducomet, Joachim Joseph	France	Steam gauges	Jan. 9, 1866.
	Dudley, W. J. and W. U. (*See* Duane, John, jr., assignor.)			
58,393	Duffee, Edward	Haverhill, Mass	Gas purifiers, dry screens for	Oct. 2, 1866.
52,929	Duffee, Edward, assignor to self and John A. Appleton, jr	....do	Gas retorts	Feb. 27, 1866.
56,490	Duffee, Edward, assignor to self and George A. Kimball	....do	Gas purifiers, screens for	July 17, 1866.
59,982	Duffee, Edward, assignor to self and George Appleton	....do	Pipe couplings	Nov. 27, 1866.
58,394	Duffy, F. B	Sparta, Wis	Bed bottom	Oct. 2, 1866.
59,983	Duffy, Mary A	New York, N. Y	Sewing machine gauge, for tucking, felling, binding, &c	Nov. 27, 1866.
56,020	Dulaney, George L	Mechanicsburg, Pa	Sewing machines	July 3, 1866.
52,275	Dummer, S. R	New York, N. Y	Dress, beater	Jan. 30, 1866.
57,487	Dummer, Samuel R	....do	Truck, hand. (Antedated August 17, 1866)	Aug. 28, 1866.
	Dummer, S. R., and J. M. Keep. (*See* Keep & Dummer.)			
	Dumont, S. M. *et al.* (*See* Dupraz, Dumont & Dickason.)			
55,257	Dumont, Sidney M., Frank Dupraz and J. Dickason	Vevay, Ind	Steering apparatus	June 5, 1866.
57,649	Du Motay, C. M. E., and C. R. Maréchal	France	Bleaching animal and vegetable fibres	Aug. 28, 1866.
59,520	Same	France	Photographic process	Nov. 6, 1866.
	Dumoulin, E., and D. Bequeret. (*See* Bequeret & Dumoulin.)			
52,276	Dunaway, Elijah F	Indianapolis, Ind	Blind slats, machines for wiring	Jan. 30, 1866.
59,196	Duncan, Eli	West Milton, Ohio	Gates	Oct. 30, 1866.
53,281	Duncan, George	San Francisco, Cal	Roofing compound	Mar. 20, 1866.
	Duncan, William, and Morgan Nottingham. (*See* Nottingham & Duncan.)			
54,133	Duncan, William A	Syracuse, N. Y	Hay, machines for raking and loading	April 24, 1866.
2,380	Dundas, James	Nemaha county, Neb. Ter	Cultivators (Reissue)	Oct. 16, 1866.
57,488	Dunham, D. M., and Jeremiah and Albion Webb	Bangor, Maine	Rakes, horse	Aug. 28, 1866.
2,324	Dunham, George	Unionville, Conn	Nuts, machines for making (Reissue)	July 31, 1866.
56,194	Dunham, J. F	Fayette, Iowa	Separators, grain	July 10, 1866.
58,619	Dunham, Ralph C	New Britain, Conn	Buckle and ring	Oct. 9, 1866.
	Dunham, T. H. *et al.* (*See* Baxendale, Samuel, assignor)			
	Dunham, Theodore R., and William Wakenshaw. (*See* Wakenshaw & Dunham)			
54,312	Dunham, Thomas H	Boston, Mass	Carpet wadding	May 1, 1866.
56,734	Dunk, A. A	Manchester, N. H	Files, mode of repairing	July 31, 1866.
	Dunlap, A. (*See* Eddy, H. L., assignor.)			
58,078	Dunlap, Charles W	Brooklyn, N. Y	Ice breaker. (Antedated September 5, 1866)	Sept. 18, 1866.
59,556	Dunlap, James V	Hartford, Conn	Lamp shades	Nov. 13, 1866.
60,158	Dunlevy, John C	Dayton, Ohio	Spirits, testing, and preventing frauds on the revenue, apparatus for.	Dec. 4, 1866.
56,538	Dunn, Albert	Plainfield, N. J	Jacks, wagon	July 24, 1866.
55,073	Dunn, Alpheus C	New York, N. Y	Barrels, composition for lining	May 29, 1866.
	Dunn, Leonard F., and Jonathan Burt. (*See* Burt & Dunn.)			
56,539	Dunn, William C	Laporte, Ind	Iron, hardening	July 24, 1866.
59,197	Dunn, William C	Greene, N. Y	Hops, training	Oct. 30, 1866.
54,463	Dunn, John A. H., assignor to James E. Rogers	Boston, Mass	Picture-frame clamps	May 1, 1866.
58,079	Dunning, Rhesa H	North San Juan, Cal	Riffle boxes	Sept. 18, 1866.
53,591	Dunton, Daniel	Brooklyn, N. Y	Churns	Apr. 3, 1866.
	Dupraz, Frank, *et al.* (*See* Dumont, Dupraz & Dickason.)			
58,791	Dupraz, F. P., S. M. Dumont, and John Dickason	Vevay, Ind	Steering apparatus	Oct. 16, 1866.
52,149	Dupuy, Charles M	New York, N. Y	Iron, wrought, directly from the ore, manufacture of	June 23, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Durand, C., *et al.* (*See* Bailly, Durand, Mesnard & Porrier.)			
	Durand, Charles, and George W. Cheesman. (*See* Cheesman & Durand.)			
52,400	Durand, F	Seymour, Conn	Shoulder braces	Feb. 6, 1866.
56,911	Durant, Amos, and Henry Grissvin	Stockton, Cal	Washing machine	Aug. 7, 1866.
52,401	Durant, A. P	Atlanta, Ill	Plough, gang	Feb. 6, 1866.
56,387	Durbon, Samuel S	Lebanon, Ind	Pumps	July 17. 1866.
58,620	Durfee, C. R	Rochester, N. Y	Collar, horse	Oct. 9, 1866.
56,388	Durfee, Zohesh Sherman	Philadelphia, Pa	Steel ingots, flasks for casting	July 17, 1866.
58,792	Same	Philadelphia, Pa	Hat box and valise	Oct. 16, 1866.
	Durfee, Zohesh Sherman. (*See* Alleyne, John Gay Newton, ass'r.)			
54,514	Durgin, Charles A	New York, N. Y	Forks, table	May 8, 1866.
2,470	Durgin, William B	Concord, N. H	Fork or spoon handle (Design)	Sept. 25, 1866.
55,202	Durkee, Branch W., assignor to self and J. Burns West	Livonia, N. Y	Sawing machines	May 29, 1866.
	{ Dutcher, Elihu, deceased, by Sarah Dutcher, administratrix, and { Warren W. Dutcher	Milford, Mass { Waukesha, Wis	Looms, temples for (Extension)	Dec. 26, 1866.
	Dutcher, W. W., and Company. (*See* White, George L., ass'r.)			
53,423	Dutcher, Warren W	Milford, Mass	Looms, roller temples for	Mar. 27, 1866.
59,984	Same	....do	Tool for setting temple teeth	Nov. 27, 1866.
59,761	Dutton, E. H	England	Liquids, apparatus for measuring	Nov. 20, 1866.
54,702	Dutton, Rufus	New York, N. Y	Harvesters, manufacture of guard fingers for	May 15, 1866.
55,074	Same	....do	Harvesters, construction of finger bars of	May 29, 1866.
56,389	Same	....do	Harvesting machines	July 17, 1866.
60,348	Dutton, R. B., assignor to self and N. C. White	Iron Hill, Iowa	Sled brakes	Dec. 11, 1866.
57,882	Duvall, Charles F	Milwaukee, Wis	Threshing machines, &c., side gear for	Sept. 11, 1866.
54,703	Duvall, George W	Norfolk, Va	Boiler thimbles	May 15, 1866.
53,127	Duvall, L	Big Spring, Ky	Spade and fork, combined	Mar. 13, 1866.
59,567	Dwelley, L. H	Dorchester, Mass	Barrels, machines for making plugs for	Nov. 13, 1866.
	Dwelley, Lucius H., and Silas S. Putnam. (*See* Putnum & Dwelley.)			
53,590	Dwight, Solomon	Rockford, Ill	Cultivators	Apr. 3, 1866.
	Dwight, Solomon. (*See* Armstrong, Wilbur I., assignor.)			
55,075	Dyott, Michael B	Philadelphia, Pa	Lamps	May 29, 1866.
55,840	Dyson, Abraham, and William N. Macqueen	St. Louis, Mo	Harvesters, corn	June 26, 1866.
51,815	Eads, James B	....do	Motion, mode of converting a rectilinear motion into a rotary	Jan. 2, 1866.
56,021	Same	....do	Ordnance, operating	July 3, 1866.
57,692	Same	....do	Ordnance, operating	Sept. 4, 1866.
52,833	Eagle, Robert N	Washington, D. C	Brush, flexible	Feb. 27, 1866.
53,961	Same	....do	Ruler	Mar. 13, 1866.
57,101	Eagle, R. N., and C. D. Smith	....do	Buttons	Aug. 14, 1866.
59,568	Eames, Charles James	New York, N. Y	Compound for coating ships' bottoms, &c	Nov. 13, 1866.
	Eames, C. J. (*See* Jones, Thomas J., assignor.)			
	Eames, Charles J., and Wesley Welty. (*See* Jones, Thomas J., assignor.)			
	Earl, William, jr. (*See* Pye, Thomas, assignor.)			

55,258	Earle, John E	New Haven, Conn	Skirt, hoop-wire, attaching	June 5, 1866.
59,371	Same	do	Furniture pad	Nov. 6, 1866.
54,134	Earle, Timothy	Valley Falls, R. I.	Egg beater	Apr. 24, 1866.
58,939	Earle, W. H., assignor to self and G. M. Buttrick	Vineland, N. J	Fruit boxes	Oct. 16, 1866.
	Earls, John N	Troy, N. Y	Smut machines (Extension)	Apr. 26, 1866.
57,102	Early, B. Frank	Palmyra, Pa	Shoe cleaner	Aug. 14, 1866.
59,372	Same	do	Broom head	Nov. 6, 1866.
53,128	Early, Samuel H	Lynchburg, Va	Pumps for deep wells	Mar. 13, 1866.
55,259	Earnest, Robert R	Springfield, Ohio	Gates	June 5, 1866.
	East Hampton Rubber Thread Company. (*See* Rust & Buzzee, assignors.)			
52,979	Easter, Samuel, assignor to self and W. W. Winship	Charlestown, Mass	Trunk, travelling	Mar. 6, 1866.
54,875	Easterbrook, M	Geneva, N. Y	Reaping and mowing machine	May 22, 1866.
54,876	Easterbrook, M., jr	do	Harvesters	May 22, 1866.
2,348	Same	do	Harvesters (Reissue)	Sept. 4, 1866.
	Eastman, C., *et al.* (*See* Walker, Andrew, assignor.)			
	Eastman, J. A., *et al.* (*See* Prosser, T. T., assignor.)			
	Same.			
59,985	Eastman, Reuben R	Granby, Mass	Butter worker	Nov. 27, 1866.
58,621	Eastman, Zebina	Chicago, Ill	Railways	Oct. 9, 1866.
52,941	Easton, James, jr., and François Thiry	England / Belgium	Paper pulp, apparatus for the manufacture of	Feb. 27, 1866.
60,492	Eastwick, Edward P	Baltimore, Md	Bone-black kilns	Dec. 18, 1866.
57,883	Eaton, Alvah	Madison, Wis	Mills, sugar-cane	Sept. 11, 1866.
	Eaton, Calvin. (*See* Rockwell, Joseph G., assignor.)			
51,893	Eaton, Daniel E., assignor to self and Joseph W. Fowle	Boston, Mass	Hoe, garden	Jan. 2, 1866.
	Eaton, John. (*See* Chase, E. P., assignor.)			
52,549	Eaton, O	Troy, N. Y	Roofing	Feb. 20, 1866.
54,830	Eaton, Richard	England	Stove, ventilating, for railroad cars	May 15, 1866.
59,329	Eaton, R	do	Grate, fire, locomotive	Oct. 30, 1866.
2,185	Eaton, Ward, assignor through mesne assignments to Thomas Bracher.	New York, N. Y	Metal, sheet, machine for serrating (Reissue)	Mar. 6, 1866.
55,076	Eayrs, Winslow P	Nashua, N. H	Pitcher, beer	May 29, 1866.
54,704	Eberhard, William	Sharon Centre, Ohio	Spinning machines	May 15, 1866.
	Eckel, John G., *et al.* (*See* Short, Joseph, assignor.)			
57,103	Eckel, J. J., and I. S. Schuyler	New York, N. Y	Tallow, lard, &c., apparatus for rendering	May 15, 1866.
57,104	Same	do	Tallow, apparatus for rendering	May 15, 1866.
	Same. (*See* Short, Joseph, assignor.)			
53,282	Eckert, Andrew L	Newark, N. J	Punch, hand	Mar. 20, 1866.
52,980	Eckert, Augustus	Trenton, Ohio	Preparing fruit and vegetables for preserving	Mar. 6, 1866.
58,793	Eckert, John	Madison, Ind	Water cooler	Oct. 16, 1866.
53,424	Eckert, John H	Lebanon, Ill	Ploughs, gang	Mar. 27, 1866.
55,260	Eckert, Thomas	New York, N. Y	Muffs, ladies'	June 5, 1866.
52,696	Eddy, Albert C	Providence, R. I	Mallet, elastic	Feb. 20, 1866.
57,301	Eddy, Augustus S	Smithville, N. Y	Evaporator	Aug. 21, 1866.
53,217	Eddy, H. L., assignor to self and A. Dunlap	Geneva, N. Y	Wood, method of preserving	Mar. 13, 1866.
54,248	Eddy, Nelson P., assignor to self and William M. Hawes	Fall River, Mass	Drills, machine	Apr. 24, 1866.
	Eddy, T. R., and Cyrus W. Saladee. (*See* Saladee & Eddy.)			
	Edgar, James. (*See* Kelso, Samuel J., assignor.)			
	Edgar, J., and J. E. Cavan. (*See* Ashley, Frederick, assignor.)			
56,491	Edgecomb, Luther B., assignor to self and Van Renssalaer Powell	Troy, N. Y	Bridge, draw, signal	July 17, 1866.
58,395	Edgell, J. B., J. W. and E. A. Alexander	Independence, Iowa	Ploughs	Oct. 2, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,166	Edgett, Andrew J., assignor to self, John W. Ferry, and A. Graves.	Hornellsville, N. Y	Planter, corn and broadcast seeder, combined	Sept. 18, 1866.
55,632	Edmond, John D., and William W. Wirt	Washington, D. C	Forks, table	June 19, 1866.
	Edmonds, E. C., and Henry Fryatt. (*See* Fryatt & Edmonds.)			
58,996	Edmunds, E. C	Buffalo, N. Y	Engine, steam, governor	Oct. 23, 1866.
52,981	Edmunds, Joseph	South Adams, Mass	Fences	Mar. 6, 1866.
57,302	Edson, Jacob	Boston, Mass	Capstan	Aug. 21, 1866.
58,396	Edson, William	do	Pot, coffee	Oct. 2, 1866.
	Edwards, Byron, and Andrew P. Anderson. (*See* Anderson & Edwards.)			
53,129	Edwards, Charles R	Niagara City, N. Y	Mills, coffee	Mar. 13, 1866.
52,697	Edwards, David	St. Anthony, Minn	Liniment	Feb. 20, 1866.
	Edwards, G. R., and H. Goodrich. (*See* Goodrich & Edwards.)			
57,884	Edwards, Joel B	Knightstown, Ind	Medical compound	Sept. 11, 1866.
54,313	Egbert, Augustus R	Philadelphia, Pa	Buckle	May 1, 1866.
58,232	Eggar, Killian	South Cortland, N. Y	Cream from whey, method of extracting	Sept. 25, 1866.
58,339	Eggleston, John C., assignor to self, E. M. Hitchcock, and G. W. Beach.	Waterbury, Conn	Lubricating apparatus	Sept. 25, 1866.
52,550	Ehart, John and Jacob	Fort Madison, Iowa	Washing machine	Feb. 13, 1866.
56,912	Ehle, Charles K	Greenbush, Wis	Mills, fanning	Aug. 7, 1866.
56,540	Ehlman, William A	Milwaukee, Wis	Chair and desk, combined	July 24, 1866.
52,653	Ehrhardt, J. H	Saxony	Load of car axles, machines for determining the	Feb. 13, 1866.
55,795	Ehrhardt, Louis H. G	England	Gunpowder	June 19, 1866.
58,080	Eiberweiser, J., and R. Weber	Cincinnati, Ohio	Straw-cutters	Sept. 18, 1866.
52,698	Eickemeyer, Rudolph	Yonkers, N. Y	Sewing machines for sewing in the sweat linings of hats, &c	Feb. 20, 1866.
57,490	Same	do	Engine, steam, governors	Aug. 28, 1866.
58,622	Same	do	Sewing sweat linings into hats	Oct. 9, 1866.
	Eickemeyer, R., and George Osterheld. (*See* Osterheld & Eickemeyer.)			
60,159	Eickenseer, George	Waterloo, Ill	Horse powers	Dec. 4, 1866.
51,894	Eigner, Andreas, assignor to Sampson R. Urbins	Bavaria	Varnish for paintings	Jan. 2, 1866.
59,569	Eisenhart, William T	Doylestown, Pa	Beehives	Nov. 13, 1866.
55,474	Eisenhart, J. Peter	Monroe, Mich	Medical compound	June 12, 1866.
51,816	Ekin, John	Xenia, Ohio	Stoves, coal	Jan. 2, 1866.
	Elastic Sponge Manufacturing Company. (*See* Doremus, R. Ogden, assignor.)			
	Elder, J., and J. B. Wilson. (*See* Prouty, Russell, assignor.)			
59,198	Elder, John, jr	New York, N. Y	Heating apparatus, steam	Oct. 30, 1866.
60,493	Elder, Samuel S	Springfield, Ill	Churn, beer cooler, &c	Dec. 18, 1866.
53,425	Elder, W. R., and O. T. Baker	Huntington, Ohio	Sheep-shearing table	Mar. 27, 1866.
58,233	Eldred, Norman J	Chicago, Ill	Stovepipe damper	Sept. 25, 1866.
54,515	Eldridge, Eli H., and Thomas Leach	Taunton, Mass	Rings, napkin, machine for embossing	May 8, 1866.
59,986	Elias, Joseph A	Le Roy, Ohio	Composition for destroying insects on trees and plants	Nov. 27, 1866.
53,962	Elkins, J. S	Marquetta, Wis	Broom head	Apr. 17, 1866.
55,633	Elkins, J. S., and J. T. Green	do	Gates, automatic	June 19, 1866.

58,764	Ellerbe, W. C. S	Camden, S. C	Plants, instrument for transplanting	Oct. 16, 1866.
56,022	Ellett, Thomas E	Monmouth, Ill	Cultivators	July 3, 1866.
2,346	Elliot, Charles D	Cambridge, Mass	Collar, plant (Design)	July 3, 1866.
55,475	Elliot, J. W	Leicester, Mass	Fastener, sash	June 12, 1866.
51,817	Elliot, Richard	Plainfield, N. J	Plough and scraper, combined	Jan. 2, 1866.
56,023	Elliot, William H	New York, N. Y	Hay loaders	July 3, 1866.
59,570	Same	do	Hay forks	Nov. 13, 1866.
59,794	Same	do	Bedstead fastening	Nov. 20, 1866.
59,795	Same	do	Bedstead fastening	Nov. 20, 1866.
59,825	Same	do	Bedstead fastening	Nov. 20, 1866.
56,541	Elliott, B. F	Cedar Rapids, Iowa	Grape trellis	July 24, 1866.
60,623	Same	do	Vines, grape, trellis for	Dec. 18, 1866.
56,913	Elliott, Hosea	Globe Village, Mass	Looms, power, picker motion for	Aug. 7, 1866.
	Elliott, H. S., and J. Knupp. (*See* Knupp & Elliott.)			
55,841	Elliott, Josiah S	East Boston, Mass	Brick machines	June 26, 1866.
58,623	Elliott, Lewis, jr	New Haven, Conn	Soles, India-rubber and leather	Oct. 9, 1866.
53,218	Elliott, Oliver O. G., assignor to self and A. R. Samuel	Philadelphia, Pa	Glass jars, mode of grinding the mouth edges of	Mar. 13, 1866.
55,797	Elliott, S. G	San Francisco, Cal	Photometers	June 19, 1866.
55,476	Elliott, William E	Stockport, N. Y	Gates, farm	June 12, 1866.
56,735	Ellis, A., and O. Albertson	Salem, Ind	Traps, animal	July 31, 1866.
58,624	Ellis, Alva E	Friendsville, Ill	Beehives	Oct. 9, 1866.
	Ellis, Charles D., *et al.* (*See* Taggart, John, assignor.) Same.			
59,987	Ellis, Henry A., assignor to self and Pequot Machine Company	Mystic River, Conn	Looms	Nov. 27, 1866.
	Ellis, James. (*See* McClure, Henry, assignor.)			
	Ellis, John, and C. H. Hall. (*See* Hall & Ellis.)			
56,195	Ellis, Seth C	Jersey City, N. J	Boring machines, wood	July 10, 1866.
56,736	Ellis, W. A	Ashtabula, Ohio	Plough-handles, machines for forming	July 31, 1866.
52,277	Ellithorp, Solomon B	New York, N. Y	Refrigerator and condenser	Jan. 30, 1866.
56,390	Ells, B. F	Dayton, Ohio	Can, fruit	July 17, 1866.
51,818	Ells, Josiah	Pittsburg, Pa	Spikes, railroad, instrument for drawing	Jan. 2, 1866.
58,234	Ellsworth, Oliver	Boston, Mass	Bit stocks	Sept. 25, 1866.
58,541	Ellsworth, Phineas C., assignor to self and M. Salizbiery	Venice, N. Y	Elevators, hay	Oct. 2, 1866.
	Elm City Company. (*See* Crosby & Kellogg, assignors.) Reissue. Same. (*See* Barney, Samuel E., assignor.) Design.			
59,796	Elmer, A. W., assignor to self and C. Ensminger	Springfield, Mass	Skates	Nov. 20, 1866.
57,489	Ellsberg, Louis	New York, N. Y	Peat, apparatus for preparing	Aug. 28, 1866.
	Elston, A., and Frank B. Atwood. (*See* Atwood & Elston.)			
60,349	Eltinge, Edgar	Kingston, N. Y	Coal scuttle	Dec. 11, 1866.
56,914	Elveena, Charles	New York, N. Y	Photographs, &c., mode of tinting	Aug. 7, 1866.
58,081	Same	do	Animals from the heat of the sun, mode of protecting	Sept. 18, 1866.
51,933	Elward, John H	Polo, Ill	Traps, animal	Jan. 9, 1866.
52,402	Same	do	Evaporator	Feb. 6, 1866.
52,699	Same	do	Coal for welding iron, &c., method of desulphurizing	Feb. 20, 1866.
52,261	Same	do	Metals from ores, apparatus for separating	June 5, 1866.
52,834	Elward, John H., and John L. Hayes	do, Boston, Mass	Gold and silver from ores, process for separating	Feb. 27, 1866.
53,526	Elwell, Henry H., assignor to the Norwalk Lock Company	Norwalk, Conn	Latches, knob	Mar. 27, 1866.
51,934	Ely, Alfred B	Boston, Mass	Telegraph insulators	Jan. 9, 1866.
51,935	Same	do	Telegraph wires, insulating	Jan. 9, 1866.
2,212	Same	Newton, Mass	Telegraph wires, insulating (Reissue)	Mar. 27, 1866.
53,426	Same	do	Telegraph insulators	Mar. 27, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,427	Ely, Alfred B	Newton, Mass	Telegraph insulators	Mar. 27, 1866.
56,542	Same	Boston, Mass	Telegraph, insulators for	July 24, 1866.
	Same. (*See* Gwynn, Stuart, assignor.)			
	Same. (*See* Ballou, Francis D., assignor.)			
60,494	Emerson, James	Lowell, Mass	Combs	Dec. 18, 1866.
55,262	Emerson, James E	Trenton, N. J	Saw-teeth, swage for sharpening	June 5, 1866.
55,263	Same	....do	Forging, shearing and punching device	June 5, 1866.
56,142	Emerson, J. E., assignor to the American Saw Company	....do	Saws	July 3, 1866.
56,627	Same	....do	Saws	Aug. 28, 1866.
57,105	Emerson, Richard H	Fond-du-Lac, Wis	Turf, machine for cutting	Aug. 14, 1866.
55,077	Emerson, S. F	Seville, Ohio	Wringer machines, roller for	May 29, 1866.
56,392	Emerson, Simeon F	....do	Gates	July 17, 1866.
57,303	Emerson, A. H	New York, N. Y	Press, hydraulic, for peat, brick, &c	Aug. 21, 1866.
58,190	Same	....do	Peat, machine for slicing and drying	Sept. 18, 1866.
	Emery, C. A., and T. T. S. Laidley. (*See* Laidley & Emery.)			
55,007	Emery, James, and Joseph E. Gott, assignors to James Emery	Bucksport, Maine	Traps, fly	May 22, 1866.
53,593	Emery, Stephen A., and Frederic A. Prince	Portland, Maine	Railway switch	Apr. 3, 1866.
55,078	Emonnot, David	New York, N. Y	Stamp, numbering	May 29, 1866.
	Emory, George T. (*See* Feyh, Henry, assignor.)			
	Empire Brecch-loading Fire-Arms Company. (*See* Conover, Jacob A., assignor.			
	Empire Sewing Machine Company. (*See* Tyler, Sidney M., assignor.)			
	Same.			
	Empire State Brick Machine Company. (*See* Barker & Martin, assignors.)			
56,543	Engelskircher, Charles	Buffalo, N. Y	Lanterns, hand	July 24, 1866.
54,135	Engle, S. D	Hazleton, Pa	Watches	Apr. 24, 1866.
58,235	English, L. C	Corning, N. Y	Stump extractor	Sept. 25, 1866.
55,079	Ennis, William	New York, N. Y	Furnaces	May 29, 1866.
55,413	Enos, John M., assignor to self and Franklin Smead	St. Joseph, Mich	Mop and wringer	June 5, 1866.
55,477	Enos, Levi S	Almond, N. Y	Fastening, door, portable	June 12, 1866.
58,997	Enqvist, Alfred A	San Francisco, Cal	Fluid, washing. (Antedated October 3, 1866)	Oct. 23, 1866.
56,393	Ensign, Charles A	Naugatuck, Conn	Binding, corded, for India-rubber and other fabrics, machine for making.	July 17, 1866.
58,397	Ensign, Peter A	Adrian, Mich	Air engines, or motors	Oct. 2, 1866.
	Ensmenger, C. (*See* Elmer, A. W., assignor.)			
57,491	Ensley, J. J	New York, N. Y	Gas, apparatus for generating	Aug. 28, 1866.
57,693	Entwistle, Thomas C	... do	Motion, device for transmitting	Sept. 4, 1866.
53,797	Epperson, James W., and Thomas W. Farrell	Woodhull, Ill	Clothes dryer	Apr. 10, 1866.
59,323	Erbe, Barthel	Pittsburg, Pa	Latches, door	Nov. 6, 1866.
53,594	Erich, Augustus F	Baltimore, Md	Cellars, apparatus for draining	Apr. 3, 1866.
52,150	Ericsson, John	New York, N. Y	Gun carriages, operating	Jan. 23, 1866.
59,988	Ernst, Frederick	....do	Lozenges	Nov. 27, 1866.
53,428	Ernst, Otto	....do	Cravats. (Antedated March 23, 1866)	Mar. 27, 1866.

58,398	Erving, Luther	Brooklyn, N. Y	Stove, cook, gas, oven for. (Antedated September 23, 1866)	Oct. 2, 1866.
56,196	Eshleman, J. Albert	Philadelphia, Pa	Neck-tie holders	July 10, 1866.
57,694	Same	do	Neck-tie supporters	Sept. 4, 1866.
55,842	Essex, Henry, and Job Johnson	West Haverstraw, N. Y. Brooklyn, N. Y.	Dress elevators	June 26, 1866.
	Essex, Henry, and George B. Sennett. (*See* Sennett & Essex.)			
55,764	Estabrook, Alanson C., assignor to J. S. Parsons and G. A. Scott.	Florence, Mass	Brush	June 19, 1866.
58,795	Estell, Samuel F	Richmond, Ind	Traps, animal	Oct. 16, 1866.
59,762	Same	do	Traps, animal	Nov. 20, 1866.
58,796	Estep, Richard P	Cincinnati, Ohio	Engines, steam, valves for	Oct. 16, 1866.
60,495	Esterle, Benjamin M	San Francisco, Cal	Wagon wheels	Dec. 18, 1866.
54,066	Estes, Samuel, assignor to C. O. Morse and N. Littlefield	Newburyport, Mass	Looms, let-off for	Apr. 17, 1866.
	Estey, Jacob, & Co. (*See* Burditt, Riley, assignor.)			
57,304	Esty, Hiram B	Houlton, Maine	Process for purifying spruce gum	Aug. 21, 1866.
56,391	Ethridge, Martin R	Lock's Mills, Maine	Boots and shoes	July 17, 1866.
58,082	Elter, Samuel P	Scotland, Pa	Cultivator	Sept. 18, 1866.
58,399	Etzold, Frederick	Union Hill, N. J	Sewing-machine shuttle	Oct. 2, 1866.
	Eustis, William T., *et al.* (*See* Halvorson, Halvor, assignor.)			
2,309	Evans, Andrew A., assignor to James A. Woodbury	Boston, Mass	Collars, shirt, paper (Division A, reissue)	July 10, 1866.
2,310	Same	do	Collars, shirt, paper (Division B, reissue)	July 10, 1866.
56,737	Same	do	Cuffs or wristbands, paper	July 31, 1866.
59,199	Evans, David S	Richmond, Ind	Fence	Oct. 30, 1866.
53,130	Evans, Edmund C	Cabinet, Pa	Weather strip	Mar. 13, 1866.
57,106	Evans, Elijah	Sparta, Ohio	Fruit picker	Aug. 7, 1866.
	Evans, G. G., *et al.* (*See* Stratton, James, assignor.)			
56,915	Evans, John	Virginia City, Nevada	Cage, safety, for miners	Aug. 7, 1866.
57,817	Evans, Joseph, and Robert H. Seymour, assignors to Henry Seymour	Newark, N. J Bloomfield, N. J	Pruning instrument	Sept. 4, 1866.
55,264	Evans, Owen	Alliance, Ohio	Wood-bending machines	June 5, 1866.
55,843	Evans, S. S	El Paso, Ill	Broom head	June 26, 1866.
2,239	Evans, Thomas R	Philadelphia, Pa	Shoe, balmoral, quarter of a (Design)	Jan. 2, 1866.
59,571	Evans, W	Forestville, Conn	Wrenches	Nov. 13, 1866.
57,492	Evans, Warren R	Thomaston, Maine	Coal and ash sifter	Aug. 28, 1866.
60,350	Evarts, John A	Meriden, Conn	Blowers	Dec. 11, 1866.
53,527	Evens, Platt, jr., assignor to the Florence Sewing Machine Company.	Cincinnati, Ohio	Sewing machine, thread tension for	Mar. 27, 1866.
	Everest, C. H. (*See* Bryan & Bigelow, assignors.)			
	Everest, H. B. (*See* Ewing, M. P., assignor.)			
	Everest, H. B., and M. P. Ewing. (*See* Ewing & Everest.)			
	Everest, H. B., and George P. Ewing. (*See* Ewing, M. P., assignor.)			
52,640	Everett, Charles J., assignor to Lockwood & Everett	New York, N. Y.	Rendering apparatus	Feb. 20, 1866.
59,312	Same	do	Rendering apparatus	Oct. 30, 1866.
	Everett, Charles J., and R. B. Lockwood. (*See* Gray, C. E., assignor.) Reissue.			
	Everett, Edward, and Samuel T. Thomas. (*See* Thomas & Everett.) Extension.			
57,695	Everett, S. H	Milton, Ohio	Lubricating brush	Sept. 4, 1866.
55,265	Everitt, E. E	Philadelphia, Pa	Sofa and crib	June 5, 1866.
56,916	Everitt, William M	Malden, N. Y	Chisels, apparatus for tempering	Aug. 7, 1866.
59,826	Evers, D	Van Wert, Ohio	Tenoning machine	Nov. 20, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
57,107	Eversol, Cyrus	Commerce, Mo	Screw-driver	Aug. 14, 1866.
59,374	Everson, Charles R	Palmyra, N. Y.	Warmer, foot	Nov. 6, 1866.
60,160	Same	do	Stove-pipe dampers. (Antedated Nov. 23, 1866)	Dec. 4, 1866.
	Everson, E., and N. B. Jewett. (*See* Jewett & Everson.)			
59,989	Evertson, John R	Mt. Vernon, Ind	Dryers, grain	Nov. 27, 1866.
56,024	Every, M. S	Bridgewater, Mich.	Racks, sheep-feeding	July 3, 1866.
59,375	Evory, Alexander F., and Alonzo Heston	La Porte, Ind	Boots and shoes	Nov. 6, 1866.
55,794	Evrard, Jean B., and Jean P. Boyer	France	Hinges, machines for making	June 19, 1866.
60,161	Evringham, Francis M	Lafayette, N. Y	Rack, hay, wagon	Dec. 4, 1866.
59,572	Ewing, James	New York, N. Y.	Wash basins, clamp for	Nov. 13, 1866.
56,852	Ewing, M. P., assignor to self and H. B. Everest	Rochester, N. Y	Petroleum, apparatus for distilling	July 31, 1866.
58,020	Ewing, M. P., assignor to H. B. Everest and George P. Ewing	do	Lubricating, material for	Sept. 11, 1866.
58,021	Ewing, M. P., and H. B. Everest, assignors to H. B. Everest and George P. Ewing.	do	Petroleum, &c., apparatus for distilling	Sept. 11, 1866.
52,360	Ewing, R. M., assignor to self and L. H. Cope	Clinton, Ill	Rakes, horse	Jan. 30, 1866.
59,200	Ewing, W. W	Mahoning, Pa.	Saw-mills	Oct. 30, 1866.
52,036	Exton, Adam	Trenton, N. J	Biscuit, scroll, apparatus for making	Jan. 16, 1866.
52,278	Same	do	Biscuit, scroll, machine	Jan. 30, 1866.
	Eynon, John, and Charles E. Morris. (*See* Morris & Eynon.)			
52,403	Faber, Adolph	Washington, D. C	Paper clamp	Feb. 6, 1866.
2,280	Fagin, A. W., assignor to Cogswell & Co	St. Louis, Mo	Trade mark (Design)	Mar. 13, 1866.
59,201	Fagin, Lewis	Cincinnati, Ohio	Millstones, hanging	Oct. 30, 1866.
57,818	Fahrney, John, assignor to self and Samuel Fahrney	Boonsboro', Md	Faucets. (Antedated August 23, 1866)	Sept. 4, 1866.
54,705	Fair, George W	Dayton, Ohio	Heater, smoke-consuming	May 15, 1866.
	Fairbanks, Henry, and Dickson Wilson. (*See* Wilson & Fairbanks.)			
59,827	Fairchild, Asahel	Independence, Iowa	Seeder and harrow, combined	Nov. 20, 1866.
53,798	Fairbanks, Horatio	Boston, Mass	Air, apparatus for carburetting	Apr. 10, 1866.
57,108	Fairbanks, J. H., and Frederick Roads	McKeesport, Pa	Vessels, valve for the hulls of	Aug. 10, 1866.
57,305	Fairbanks, J. J	New York, N. Y.	Skirt springs, machine for forming and cutting	Aug. 21, 1866.
	Fairbanks, Moses, and Josiah Beard. (*See* Beard & Fairbanks.)			
58,797	Fairchild, H. C	Brooklyn, Pa	Wagon brakes	Oct. 16, 1866.
53,528	Fairchild, J. H., assignor to self and Andrew Parker	Highgate, Vt	Condenser	Mar. 27, 1866.
53,735	Fairchild, J. H., assignor to self and George L. Hayward	East Highgate, Vt	Separator, grain	Apr., 3, 1866.
55,478	Fairchild, Josiah B	Covington, Ky	Traps, animal	June 12, 1866.
52,117	Fairlie, Robert Francis	England	Engines, locomotive	Jan. 16, 1866.
54,475	Falck, Charles	do	Refrigerator	May 1, 1866.
2,181	Falconer, Ralph J	Washington, D. C	Hose couplings (Reissue)	Feb. 27, 1866.
	Fales, Alfred, and Erastus P. Carpenter. (*See* Boyden, Alexander, assignor.)			
52,835	Fales, Joel F	Walpole, Mass	Carpet lining	Feb. 27, 1866.
52,151	Fales, Levi S	Boston, Mass	Distillation of tar and other substances, apparatus for	Jan. 23, 1866.
54,877	Falloon, Thomas	Lyons, N. Y	Bed bottom	May 22, 1866.
54,516	Fallows, James	Philadelphia, Pa.	Spoons, sheet-metal	May 8, 1866.
54,517	Same	do	Pepper-box	May 8, 1866.

53,131	Faulkner, Francis L	Derby, Conn	Spittoons	Mar. 13, 1866.
53,801	Faulkner, Joseph W	Rockford, Ill	Horseshoes	Apr. 10, 1866.
52,489	Faure, Cyprien, assignor to self and C. Francis Bates	New York, N. Y	Hat bodies, machines for felting	Feb. 6, 1866.
	Fauski, M., and H. Waldstein. (*See* Waldstein & Fauski.)			
53,219	Fawcett, Samuel, assignor to self and Alanson Brown	Rochester, N. Y	Tools, boring, coupling shafts of. (Antedated March 2, 1866)	Mar. 13, 1866.
59,900	Fanckboner, Abram, assignor to Almeron F. Chapin	Schoolcraft, Mich	Fence, field	Nov. 20, 1866.
58,625	Fancher, Theodore B	Norwalk, Conn	Engine, steam, globe valves	Oct. 9, 1866.
52,551	Faris, John E	Baltimore, Md	Mirrors, hand	Feb. 13, 1866.
	Farmer, C. K., *et al.* (*See* White, Luther C., assignor.) Reissue.			
	Farmer, Edgar, and Wm. H. Cleveland. (*See* Jackson, Luther, assignor.)			
53,799	Farmer, George P	Philadelphia, Pa	Needles into paper, machine for sticking	Apr. 10, 1866.
	Farmer, Moses G	Salem, Mass	Electro-magnetic alarm bells. (Extension)	May 1, 1866.
59,763	Farmer, M. G., and G. F. Milliken	do / Boston, Mass	Telegraphs, line wires for	Nov. 20, 1866.
54,314	Farmer, William S	New York, N. Y	Chairs, seats and backs for	May 1, 1866.
54,249	Farnham, Daniel P., assignor to self and Moses Farnham	Rock county, Ill	Broom	Apr. 24, 1866.
60,162	Farnham, Willard	Janesville, Wis	Alarm, burglar	Dec. 4, 1866.
53,595	Farnham, W. H	Sparta, Wis	Medicine	Apr. 3, 1866.
59,521	Farnworth, John Kay	England	Fastenings, sash	Nov. 6, 1866.
58,236	Farquhar, Francis, and R. E. Doan	Wilmington, Ohio	Evaporator	Sept. 25, 1866.
	Farquhar, L. J., and J. M. Riter. (*See* Riter & Farquhar.)			
	Farquharson, Duncan S., and Henry L. Jones. (*See* Jones & Farquharson.)			
	Same.			
	Same. Reissue.			
	Same. Reissue.			
	Farrand, Joseph P., and John H. Knight. (*See* Knight & Farrand.) Design.			
	Farrand, Samuel A. (*See* Scarlett, Augustus, assignor.)			
59,764	Farrar, Chilion M	Buffalo, N. Y	Valves, safety, lock-up	Nov. 20, 1866.
	Farrell, Thomas W., and James W. Epperson. (*See* Epperson & Farrell.)			
	Farrell, W. R., and T. K. Sterrett. (*See* Sterrett & Farrell.)			
	Farringer, Samuel, and James Manderson. (*See* Manderson & Farringer.)			
	Farrington, Lafayette, *et al.* (*See* Hoyt, Jerome, assignor.)			
	Farro, Frank, and A. Newton. (*See* Newton & Farro.)			
53,800	Farwell, Henry B	Boston, Mass	Leather, scrap, method of treating	Apr. 10, 1866.
54,706	Fasig, Daniel	Rowsburg, Ohio	Jacks, lifting	May 15, 1866.
58,237	Same	do	Straw and hay knife	Sept. 25, 1866.
52,279	Fasig, John	West Salem, Ohio	Hay and pruning knife	Jan. 30, 1866.
2,417	Fassmann, E. Victor	New Orleans, La	Bales, cotton, hoop-locks for (Reissue)	Dec. 11, 1866.
58,798	Fate, James M	Boonsboro', Iowa	Planters, corn and cane	Oct. 16, 1866.
59,797	Fattie, George L	Buffalo, N. Y	Fluid, burning	Nov. 20, 1866.
54,464	Faught, Samuel P., assignor to self and Wm. T. Cook	Foxboro', Mass	Brush	May 1, 1866.
60,163	Faught, Luther R	Philadelphia, Pa	Lathes, turning	Dec. 4, 1866.
	Faxon, E. G. L., *et al.* (*See* Curtis & Tripp, assignors.)			
	Same. (*See* Tripp, Thomas, assignor.)			
	Faxon, E. G. L., *et al.* (*See* Tripp & Curtis, assignors.)			
	Same.			

List of patentees of inventions, designs, and reissues 1866—Continued.

No	Patentee.	Residence.	Invention or discovery.	Date.
	Fay, Cyrus J., *et al.* (*See* Irving, McNeil, Rich & Fay.)			
59,828	Fay, J. C.	New York, N. Y.	Wind wheels	Nov. 20, 1866.
60,624	Fay, Samuel B.	Franklin, Pa.	Tags, metal loop for	Dec. 18, 1866.
	Fay, W. B., and J. Stevens. (*See* Stevens & Fay.)			
59,376	Federhen, Jacob	Boston, Mass.	Croquet boards	Nov. 6, 1866.
58,083	Fehrenbatch, John	Indianapolis, Ind.	Boats, small, hand propeller for	Sept. 18, 1866.
59,765	Fell, Henry R., and Edward Phifer	Trenton, N. J.	Planter, cotton-seed	Nov. 20, 1866.
56,685	Fell, Thomas M. and Ambrose G., assignors to selves and William Bell.	New York, N. Y.	White lead, manufacture of	July 24, 1866.
59,901	Same	Brooklyn, N. Y.	White lead, manufacture of. (Antedated September 25, 1866)	Nov. 20, 1866.
59,902	Same	do.	White lead, manufacture of. (Antedated September 25, 1866)	Nov. 20, 1866.
58,542	Fellows, John, assignor to self and Albert Card	Chicago, Ill.	Carriage seats, shifting rails for	Oct. 2, 1866.
55,634	Fellows, John C.	South Adams, Mass.	Washing machine	June 19, 1866.
52,836	Felt, George H.	New York, N. Y.	Blasting, plug for	Feb. 27, 1866.
2,151	Felter, Philo S.	Cincinnatus, N. Y.	Locks (Reissue)	Jan. 23, 1866.
56,394	Same	do.	Locks	July 17, 1866.
53,429	Felthouse, Henry D. and John H.	Philadelphia, Pa.	Egg-beater	Mar. 27, 1866.
59,505	Ferguson, E. L., assignor to self and Charles B. Clark	Buffalo, N. Y.	Sash holder or fastener	Nov. 6, 1866.
57,628	Ferguson, Henry J., assignor to Selah Reeve	New York, N. Y.	Brick machine	Aug. 28, 1866.
56,738	Ferguson, John K.	Portland, Ky.	Condensers, steam	July 31, 1866.
57,109	Ferguson, Levi	Lowell, Mass.	Fibrous material, pickers for	Aug. 14, 1866.
54,465	Ferguson, Levi, assignor to self and D. M. Weston	do.	Spinning, &c., bobbins for	May 1, 1866.
56,917	Ferl, P. H., and W. Larkins	Detroit, Mich.	Fishing apparatus	Aug. 7, 1866.
	Fernald, Edwin. (*See* Richardson, John, assignor.)			
57,041	Ferrell, James M., assignor to self, William H. Siner, and Charles H. Dedrick.	Philadelphia, Pa.	Brick moulds	Aug. 7, 1866.
56,918	Ferrier, Wesley S.	Indiana, Pa.	Churns	Aug. 7, 1866.
59,573	Ferris, Alfred	Benville, Ind.	Paint, composition for	Nov. 13, 1866.
56,197	Ferris, G. W.	Quincy, Ill.	Liquors, spirituous, refining	July 10, 1866.
56,198	Same	do.	Charcoal for filtering, preparing	July 10, 1866.
53,963	Ferris, Henry	Galesburg, Ill.	Plant, hedge, grab	Apr. 17, 1866.
53,596	Ferris, Isaac	Cincinnati, Ohio	Engines, steam	Apr. 3, 1866.
	Ferry, John W., *et al.* (*See* Edgett, Andrew J., assignor.)			
	Fessler, E. and H., *et al.* (*See* Maxell & Fessler.)			
58,799	Fessler, Henry, and Henry Maxell	Canton, Ohio	Furnace doors, device for opening	Oct. 16, 1866.
60,496	Feyh, Henry, assignor to self and George T. Emory	Columbus, Ohio	Steam generators. (Antedated September 13, 1866)	Dec. 18, 1866.
52,982	Fitchet, Leopold V.	New York, N. Y.	Steam superheater	Mar. 6, 1866.
53,964	Same	do.	Petroleum, apparatus for distilling	Apr. 17, 1866.
56,853	Field, Ben, assignor to self and George M. Pullman	Albion, N. Y.	Car, sleeping	July 31, 1866.
	Field, B. J., and J. C. Guerrant. (*See* Guerrant & Field.)			
54,136	Field, Charles H.	Providence, R. I.	Watch rims, manufacture of	Apr. 24, 1866.
54,137	Same	do.	Watch backs, manufacture of	Apr. 24, 1866.
56,199	Field, Edward	Cincinnati, Ohio	Bellows	July 10, 1866.
55,635	Field, Edward A.	Sidney, Maine	Fishing nets	June 19, 1866.
59,829	Field, J. D.	Keokuk, Iowa	Seeding machines	Nov. 20, 1866.

56,395	Field, John H	Saugerties, N. Y	Ordnance, operating	July 17, 1866.
54,518	Field, Joseph C	Buffalo, N. Y	Tile mould	May 8, 1866.
53,430	Field, Samuel T	St. Louis, Mo	Telegraph cable	Mar. 27, 1866.
59,202	Field, Wichum, and Robert Carruthers	Bergen, N. Y	Hinges, gate	Oct. 30, 1866.
59,203	Field, William H	Taunton, Mass	Leathering tacks, machine for	Oct. 30, 1866.
56,919	Fieldhouse, Joseph	....do	Furnace, pipe-welding	Aug. 7, 1866.
54,643	Fieldhouse, Joseph, assignor to the Dighton Furnace Company.	Dighton, Mass	Pipes, gas, dies for forming	May 8, 1866.
	Fieldstad, John. (*See* Hughes, William, assignor.)			
51,819	Fiester, John W	Winchester, Ohio	Broom head	Jan. 2, 1866.
56,544	Fifield, Levi W	Holderness, N. H	Knitting-machine needle. (Antedated July 13, 1866)	July 24, 1866.
56,025	Figer, B	Cleveland, Ohio	Brushes, scrubbing	July 3, 1866.
57,110	Figge, Daniel	Jenner's Cross-Roads, Pa	Hay forks, horse	Aug. 14, 1866.
56,200	Fillebrown, Luther W., jr	Wayne, Maine	Seats, spring	July 10, 1866.
	Finch, E. D., and William A. Russell. (*See* Wright, E. B., assignor.)			
	Finch, W. R. (*See* Winans, W. H., assignor.)			
	Finley, H. H. (*See* Crowl, Peter, assignor.)			
59,377	Finley, John E	Memphis, Tenn	Beehives	Nov. 6, 1866.
	Finley, T., *et al.* (*See* Hall, Henry, assignor.)			
52,122	Finson, Charles H	Bangor, Maine	Rakes, horse	Jan. 23, 1866.
51,820	Firmenich, Joseph	Buffalo, N. Y	Faucets, beer	Jan. 2, 1866.
53,283	Same	....do	Faucets, beer	Mar. 20, 1866.
53,284	Same	....do	Steam generators	Mar. 20, 1866.
54,707	Same	....do	Faucet, beer	May 15, 1866.
59,374	Firth, Thomas	Cincinnati, Ohio	Low-water detectors	Nov. 13, 1866.
53,285	Fischer, Adalbert	New York, N. Y	Beer, &c., apparatus for cooling	Mar. 20, 1866.
54,708	Same	....do	Liquid cooler	May 15, 1866.
2,292	Same	....do	Liquid cooler (Reissue)	June 26, 1866.
55,765	Fischer, Francis J., assignor to self and John B. Beming	Hamilton, Ohio	Hay knife	June 19, 1866.
58,238	Fish, Benjamin	Mechanicsburg, Pa	Tuyeres	Sept. 25, 1866.
	Fish Hook and Needle Company. (*See* Crosby, C. O., assignor.)			
53,431	Fish, Randall	Washington, D. C	Fuel, artificial	Mar. 27, 1866.
58,626	Fish, R. A	Worcester, Mass	Spike pullers	Oct. 9, 1866.
54,315	Fish, T. Phelon	Crane's Corners, N. Y	Hoes, horse	May 1, 1866.
54,316	Fishbaugh, John	Tiffin, Ohio	Wood-bending machines	May 1, 1866.
55,266	Fishel, Marks	New York, N. Y	Skirts, hoop	June 5, 1866.
55,267	Same	....do	Skirt wire, flat, therein, instruments for puncturing fabrics and introducing	June 5, 1866.
58,239	Fisher, Clark	Trenton, N. J	Furnaces, method of promoting combustion in	Sept. 25, 1866.
	Fisher, D., *et al.* (*See* Barton, Rogers & Fisher.)			
56,739	Fisher, Henry	Canton, Ohio	Hay forks, horse	July 31, 1866.
53,132	Fisher, Henry, and Milton Ball	....do	Washing and wringing machines	Mar. 13, 1866.
53,286	Same	....do	Hay forks, horse	Mar. 20, 1866.
56,545	Same	....do	Reaping machines	July 24, 1866.
58,998	Fisher, Henry S	Oakville, Pa	Jars and cans, seal for	Oct. 23, 1866.
60,351	Fisher, William	Ripon, Wis	Bed-clothes clamp	Dec. 11, 1866.
54,317	Fisher, William D	Freeport, Ill	Cultivator	May 1, 1866.
57,885	Fisher, William D., and William Holly	....do	Dryer, fruit	Sept. 11, 1866.
53,432	Fiske, D. A	Delavan, Wis	Churns	Mar. 27, 1866
59,204	Fiske, Isaac	Worcester, Mass	Cornets and other wind instruments	Oct. 30, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,965	Fisler, Thomas	Camden, N. J	Punch mixer and egg beater	Apr. 17, 1866.
55,268	Fitch, Charles H	Auburn, N. Y	Stove-pipe thimble	June 5, 1866.
58,800	Fitch, George A	Kalamazoo, Mich	Cartridges, priming	Oct. 16, 1866.
	Fitch, J. L., and J. R. Van Vechten. (*See* Powers, Timothy J., assignor.)			
	Same.			
	Same.			
53,133	Fitch, Timothy B	Norwalk, Conn	Sandpaper holders	Mar. 13, 1866.
54,318	Fitts, Benaiah	Newark, N. J	Boiler tubes	May 1, 1866.
59,378	Fitts, John E	Candia Village, N. Y	Gates	Nov. 6, 1866.
58,240	Fitzgerald, Frederick	Cincinnati, Ohio	Vault cover	Sept. 25, 1866.
60,164	Fitzgerald, James C	Willet, N. Y	Cultivator, rotary	Dec. 4, 1866.
54,519	Fitzgerald, Walter	Boston, Mass	Gearing for lathes, &c	May 8, 1866.
59,903	Same	....do	Pegging machine	Nov. 20, 1866.
	Fitzgibbons, Maurice, and William H. Halsey. (*See* Halsey & Fitzgibbons.)			
	Same.			
	Same.			
54,466	Fitzhugh, B. G., assignor to self, John M. Griffith, and James Brewster.	Baltimore, Md	Harvesters	May 1, 1866.
52,552	Fitzpatrick, Daniel	West Winsted, Conn	Cutlery	Feb. 13, 1866.
	Fix, Charles, *et al.* (*See* Goty & Guillemin, assignors.)			
53,287	Flad, Henry	St. Louis, Mo	Filter	Mar. 20, 1866.
57,306	Flagg, Daniel	Concord, N. H	Water elevating device	Aug. 21, 1866.
55,766	Flagg, F. W., assignor to self and E. B. Manning	Middletown, Conn	Toys, whirling jack for	June 19, 1866.
54,319	Flagg, James H	Perkinsville, Vt	Stove, soapstone	May 1, 1866.
58,627	Flagg, Jared B., and George Storer	New Haven, Conn New Britain, Conn	Canvas, stretchers for	Oct. 9, 1866.
2,334	Flagg, J. M	Providence, R. I	Collars, paper, tucked, ladies' (Design)	June 12, 1866.
	Flagg, Lysander. (*See* Bioren, C. W., assignor.)			
	Flagg, Lysander, jr. (*See* Bucklin, Edward, jr., assignor.)			
52,280	Flagg, Ward N	Boylston, Mass	Laster, shank	Jan. 30, 1866.
59,522	Flamm, Pierre	France	Typography	Nov. 6, 1866.
59,904	Flanders, Ira	Lafayette, Mich	Stump extractors	Nov. 20, 1866.
	Flannagan, John J., and Josiah Oakes. (*See* Sweeney, Peter, assignor.)			
52,837	Fleck, John	Santa Cruz, Cal	Quartz crushers	Feb. 27, 1866.
56,337	Fleetwood, Daniel Joseph	England	Spoons, forks, &c., manufacture of	July 10, 1866.
52,404	Fleig, George	Philadelphia, Pa	Chair, rocking, and fan	Feb. 6, 1866.
	Fleisch, J. H., and H. Bendix. (*See* Bendix & Fleisch.)			
52,037	Fleischmann, Charles Louis	New York, N. Y	Gins, cotton	Jan. 16, 1866.
58,084	Fleisher, M	Philadelphia, Pa	Skates	Sept. 18, 1866.
59,575	Fleisher, Moyer	....do	Skate fastening	Nov. 13, 1866.
2,326	Flersheim, Lemuel H	Chicago, Ill	Trade mark for lead pencils (Design)	May 29, 1866.
53,966	Fletcher, Addison C	New York, N. Y	Grate bar	Apr. 17, 1866.

53,967	Same	....do	Condensers, surface	Apr. 17, 1866.
58,085	Fletcher, A. F	Athol, Mass	Pumps	Sept. 18, 1866.
58,801	Same	....do	Pumps	Oct. 16, 1866.
54,878	Fletcher, Benjamin S., assignor to self and Sylvester Davis	Cornish, N. H	Churns	May 22, 1866.
2,335	Fletcher, H., assignor to the Fletcher Manufacturing Company.	Providence, R. I	Trade mark (Design)	June 12, 1866.
2,336	Same	....do	Trade mark (Design)	June 12, 1866.
54,879	Fletcher, James H	Lowell, Mass	Bed bottom	May 22, 1866.
57,307	Fletcher, John	Newark, N. J	Leather, japanned, fabric to be used as a substitute for	Aug. 21, 1866.
56,396	Fletcher, Matthew	Louisville, Ky	Steam generators	July 17, 1866.
57,696	Same	....do	Carriage, steam	Sept. 4, 1866.
58,086	Same	....do	Engines, steam, rotary	Sept. 18, 1866.
	Fleury, A. L. (*See* Kerpely, Anton Karl, assignor.)			
52,553	Fleury, Anthony L	Pittsburg, Pa	Wood, non-inflammable, manufacture of	Feb. 13, 1866.
52,554	Same	....do	Coal dust and cinder, mode of utilizing	Feb. 13, 1866.
56,026	Same	....do	Steel, manufacture of	July 3, 1866.
56,027	Same	....do	Ores, gold and silver, desulphurizing	July 3, 1866.
59,576	Same	New York, N. Y	Medical or aromatic substances, apparatus for diffusing the vapors of. (Antedated May 13, 1866.)	Nov. 13, 1866.
	Flinn, Andrew C., and Henry C. Biggs. (*See* Biggs & Flinn.)			
56,740	Flinn, John	Philadelphia, Pa	Bed bottom	July 31, 1866.
57,055	Flinn, Patrick, deceased, by Abel T. Atherton, administrator	Lowell, Mass	Heater, sad iron	Aug. 7, 1866.
54,520	Flinn, William H	Nashua, N. H	Wire, machine for cutting	May 8, 1866.
54,880	Flint, Delos C	Bushnell, Ill	Stripping cane, machine for	May 22, 1866.
57,250	Flora, Orlando V., assignor to self and John G. Moore	Madison, Ind	Vices, carpenters'	Aug. 14, 1866.
	Florence Sewing Machine Company. (*See* Evens, Platt, jr., assignor.)			
52,281	Floyd, M. C	Bloomfield, Iowa	Planter, corn	Jan. 30, 1866.
52,983	Floyd, William G	Brooklyn, E. D., N. Y	Clamp, adjustable	Mar. 6, 1866.
54,320	Foard, J. W	San Francisco, Cal	File, newspaper	May 1, 1866.
60,352	Same	....do	Ventilator, vacuum	Dec. 11, 1866.
55,581	Focer, John, assignor to T. H. and S. A. Whitney	Glassboro', N. J	Jar, fruit	June 12, 1866.
59,577	Fogelgesang, Frederic	Canton, Ohio	Ploughs	Nov. 13, 1866.
52,928	Fogerty, Valentine, assignor to C. Callaghan and J. Birmingham.	Boston, Mass	Lemon squeezer	Feb. 27, 1866.
59,126	Fogerty, Valentine, assignor to self and Paul P. Todd	....do	Fire-arms, magazine	Oct. 23, 1866.
52,405	Fogg, Julian A	Salem, Mass	Coffins	Feb. 6, 1866.
54,321	Same	....do	Burial caskets	May 1, 1866.
57,829	Same	....do	Coffins	Sept. 4, 1866.
54,881	Fogg, Nelson T	Lewiston, Me	Pumps	May 22, 1866.
53,802	Fohr, F	Rowlesburg, West Va	Well borer	Apr. 10, 1866.
55,636	Foley, D. D	Washington, D. C	Letter box, postal	June 19, 1866.
59,990	Same	....do	Post driver	Nov. 27, 1866.
59,578	Follensbee, W. S	Janesville, Wis	Wells, grouting form for	Nov. 13, 1866.
53,968	Folsom, Benjamin	Detroit, Mich	Railroads, snow, ice, and mud scraper for	Apr. 17, 1866.
	Folsom, E., and J. L. Wiggin. (*See* Wiggin & Folsom.)			
56,028	Folsom, H. L	Upper Gilmanton, N. H	Tether	July 3, 1866.
	Folsom, John R. (*See* Calef, Joseph W., assignor.)			
59,379	Fontaine, Amadee	Milwaukee, Wis	Alarm, fire	Nov. 6, 1866.
59,579	Fontaine, Eugene, and Oscar A. Simons	Fort Wayne, Ind	Alarm, fire	Nov. 13, 1866.
59,716	Fontaine, John B., assignor to Hoff, Fontaine & Abbott	Philadelphia, Pa	Plates, hollow pressure	Nov. 13, 1866.
54,322	Foote, A. D	Berlin, Wis	Grain spout	May 1, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
60,497	Foote, C. D	Fond du Lac, Wis	Drill, rock	Dec. 18, 1866.
54,882	Foote, George F	New York, N. Y	Dentists, tool-holder for	May 22, 1866.
58,087	Foote, Henry R	Oil City, Pa	Oils, hydro-carbon, apparatus for generating and burning vapor of.	Sept. 18, 1866.
60,353	Foote, M. B	Northampton, Mass	Sewing machines, needle-threader for	Dec. 11, 1866.
55,269	Forbes, A. D	Rockford, Ill	Broom head, stock for	June 5, 1866.
	Forbes, D., and J. E. Wilsey. (*See* Wilsey & Forbes.) Same.			
	Forbush, Eliakim B	Buffalo, N. Y	Harvesters (Extension)	July 19, 1866.
	Same	do	Harvesters (Extension)	July 19, 1866.
	Same	do	Harvesters (Extension)	July 19, 1866.
	Same	do	Harvesters (Extension)	July 19, 1866.
59,506	Forbush, E. B., and Josiah Letchworth, assignors to Pratt & Letchworth.	do	Hook, snap	Nov. 6, 1866.
59,533	Forbush, Walter H., assignor to Henry G. Leisenring	do	Printing press, railroad ticket	Nov. 6, 1866.
56,029	Force, Albert M	Norwich, Conn	Steam traps	July 3, 1866.
52,113	Ford, Charles Henry, assignor to self, Hayward, Jesse L., and Elias S. Hutchinson.	Baltimore, Md	Steam generators, feed apparatus for	Jan. 16, 1866.
52,114	Same	do	Steam damper, regulator and indicator	Jan. 16, 1866.
52,115	Same	do	Steam generators, automatic	Jan. 16, 1866.
52,243	Same	do	Steam generators	Jan. 23, 1866.
52,984	Ford, E. G., and J. F. Penquite	Delphos, Ohio	Diggers, potato	Mar. 6, 1866.
52,700	Ford, Elias T	Stillwater, N. Y	Harvester rakes	Feb. 20, 1866.
52,701	Same	do	Harvesting machines	Feb. 20, 1866.
52,838	Same	do	Pressing straw, machine for	Feb. 27, 1866.
56,397	Same	do	Harvesters	July 17, 1866.
58,999	Ford, Frederic G	New York, N. Y	Caster for furniture	Oct. 23, 1866.
	Ford, James, and A. R. Henderson. (*See* Henderson & Ford.)			
57,308	Ford, John C., assignor to D. L. and W. M. Rice	Cambridge, Mass	Collar, paper, machines	Aug. 14, 1866.
52,839	Ford, John E	Memphis, Tenn	Hose coupling	Feb. 27, 1866.
	Ford, John G. (*See* Jillson & Whinfield, assignors.) Reissue.			
54,267	Fordred, John	England	Oils, hydro-carbon, method of purifying	Apr. 24, 1866.
54,138	Foreacre, M	Harrisburg, Ohio	Racks, sheep	Apr. 24, 1866.
58,802	Foreman, M	Philadelphia, Pa	Steam generators	Oct. 16, 1866.
58,088	Foreman, M., and J. R. Mathewson	do	Amalgamating gold with mercury	Sept. 18, 1866.
	Foreman, S., *et al.* (*See* Simpson, Oman & Foreman.)			
	Foreman, William. (*See* Guecher, S. J., assignor.)			
58,400	Forney, D. S	Wytheville, Va	Privies	Oct. 2, 1866.
52,406	Forney, M. W	Baltimore, Md	Locomotives	Feb. 6, 1866.
53,597	Forrer, Jacob T	Peoria, Ill	Mash machine	Apr. 3, 1866.
56,030	Forrest, Nelson B	Auburn, N. Y	Car brake	July 3, 1866.
54,521	Forsberg, Adolph O	Cincinnati, Ohio	Trusses, hernial	May 8, 1866.
57,111	Forschner, Charles	New York, N. Y	Fat, lard, &c., machine for cutting	Aug. 14, 1866.
55,080	Forshey, Caleb G	Washington county, Texas	Vessels, steering and turning apparatus for	May 29, 1866.
58,803	Forster, Charles	Pittsburg, Pa	Well, oil, drill	Oct. 16, 1866.

52,244	Forster, Charles, assignor to self and Robert C. Totten	Pittsburg, Pa	Shot and shell, spherical, lathes for turning	Jan. 23, 1866.
	Forster, Thomas. (*See* Steffe, Jacob, assignor.) Design.			
	Forsyth, J. (*See* Dopp & Weiss, assignors.)			
52,153	Forsyth, James B	Roxbury, Mass	Wringers, rollers for	Jan. 23, 1866.
56,398	Same	....do	Wringing machines, rubber rollers for	July 17, 1866.
59,580	Same	....do	Rubber, India, rollers, manufacture of	Nov. 13, 1866.
59,798	Same	....do	Clothes wringers, rollers for	Nov. 20, 1866.
2,191	Forsyth, James Bennett, assignor through mesne assignment to himself.	....do	Rubber, India, hose, belting, &c., machine for making..(Reissue)..	Mar. 13, 1866.
	Forsyth, James B., and Charles McBurney. (*See* McBurney & Forsyth.)			
58,628	Forsyth, John W., assignor to self, J. W., and Nelson Head	Leesburg, Va	Churns	Oct. 9, 1866.
	Fort, Charles H. (*See* Perry, Samuel, assignor.)			
55,479	Foss, James M	Concord, N. H	Locomotives, draft-pipes for	June 12, 1866.
	Fossé, Eugene F., and Louis E. A., and Louis A. Velu. (*See* Velu & Fossé.)			
60,354	Fosseé, Lewis	Jeffersonville, Ind	Sawing machine, circular	Dec. 11, 1866.
60,625	Foster, A. K. and B. H	Hallettsville, Texas	Cultivators, cotton	Dec. 18, 1866.
51,821	Foster, Alexander W., jr	Pittsburg, Pa	Valve gear, cut-off	Jan. 2, 1866.
	Foster, Ambrose, *et al.* (*See* Greacen, Foster & Cooper.)			
55,414	Foster, Calvin A., assignor to A. F. Spaulding and S. M. Scott.	Winchendon, Mass	Meat-chopper	June 5, 1866.
2,514	Foster, Charles A	North Providence, R. I	Picture, ornamental, for animal studies (Design)..	Dec. 4, 1866.
57,112	Foster, Clinton	Galesburg, Ill	Power by means of railroad cars operating upon rails, method of transmitting.	Aug. 14, 1866.
56,399	Foster, George P. and George F	Mohawk, N. Y	Fire-arms, breech-loading	July 17, 1866.
	Foster, George W. (*See* Brown, Thomas L., assignor.)			
56,031	Foster, Gilbert S	Sullivan, Maine	Washing machine	July 3, 1866.
52,555	Foster, Harry	Port Jervis, N. Y	Curtain, window	Feb. 13, 1866.
	Foster, H. E. (*See* Stubbs, Josiah, assignor.)			
52,038	Foster, Horace N	East Greenwich, R. I	Steam traps	Jan. 16, 1866.
53,803	Foster, Joseph and Ephraim	Keene, N. H	Musical instruments	Apr. 10, 1866.
59,905	Foster, Joseph S	San Francisco, Cal	Rolling, pastry	Nov. 20, 1866.
56,920	Foster, J. T	Jersey City, N. J	Pen and penholder	Aug. 7, 1866.
56,546	Foster, Junius	Long Branch, N. J	Measuring tires of wheels, instruments for. (Antedated July 15, 1866.)	July 24, 1866.
53,288	Foster, Theodore	Coxsackie, N. Y	Hay forks, horse	Mar. 20, 1866.
60,165	Foster, Thomas M	Union Mills, Pa	Wells, oil	Dec. 4, 1866.
	Foster, Walter K. (*See* Delano, William, assignor.)			
51,936	Foster, William and Robert	Brooklyn, N. Y	Pumps, rotary	Jan. 9, 1866.
60,166	Foubert, Andre	New York, N. Y	Oils, wines, and other liquids, distilling and refining	Dec. 4, 1866.
2,347	{ Fougera, E. C., and { B. A. Vanderkieft	Brooklyn, N. Y New York, N. Y	Bottle (Design)..	July 3, 1866.
58,034	Fouilloux, Louis	France	Rheumatism, method of curing	Sept. 11, 1866.
	Foulds, Thomas H. (*See* Millward, Frank, assignor.)			
	Same. (*See* Robbins, Hiram, assignor.)			
	Same.			
	Same.			
	Same. (*See* Hardy, Dexter D., assignor.)			
59,581	Foulds, William H	Henderson, Ky	Hinges for window shutters	Nov. 13, 1866.
57,629	Foulkes, Henry, assignor to John H. Chapman	Utica, N. Y	Hook, breast, strap	Aug. 28, 1866.
54,139	Fountain, J. L	New Milford, Ill	Seeder and cultivator, combined	Apr. 24, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,522	Fountain, J. L	New Milford, Ill	Cultivator blade, mode of attaching	May 8, 1866.
60,355	Fountain, Vincent, jr	Castleton, N. Y	Potato masher	Dec. 11, 1866.
56,505	Fournier, Jules Edmond	France	Acetate of lead, manufacture of	July 17, 1866.
58,804	Foust, J. W	Evansburg, Pa	Rakers and loaders, hay	Oct. 16, 1866.
	Fowle, Joseph W. (*See* Eaton, Daniel W., assignor.)			
2,275	Fowle, Joseph W	Boston, Mass	Drilling machines, steam (Reissue)	June 5, 1866.
59,830	Fowler, Charles E	Carmel, N. Y	Match safe, pocket	Nov. 20, 1866.
54,140	Fowler, Elijah	New York, N. Y	Settee and table	Apr. 24, 1866.
57,113	Fowler, F. F	Upper Sandusky, Ohio	Harvesters, corn	Aug. 14, 1866.
57,114	Same	....do	Hay forks, horse	Aug. 14, 1866.
57,115	Same	....do	Stack bottom and feed rack combined	Aug. 14, 1866.
	Fowler, F. F., and Frank Wicks. (*See* Wicks & Fowler.)			
53,289	Fowler, George B	New York, N. Y	Splitters, wood	Mar. 20, 1866.
54,883	Fowler, George H	New Haven, Conn	Shoes, India-rubber, manufacture of	May 22, 1866.
56,492	Fowler, James H., and A. J. French, assignors to the American Flask and Cap Company.	Waterbury, Conn	Caps, percussion, machine for trimming	July 17, 1866.
57,652	Fowler, John, jr., William Worby, and David Greig, assignors to William P. Latham.	England	Ploughs, steam	Aug. 28, 1866.
57,653	Fowler, John, jr., deceased, by Robert Fowler and Robert W. Eddison, executors; David Greig and Richard Noddings, assignors to William P. Latham.	....do	Ploughs, steam	Aug. 28, 1866.
52,407	Fowler, Joseph	Rahway, N. J	Ploughs	Feb. 6, 1866.
54,884	Same	....do	Ore crushers	May 22, 1866.
58,089	Same	....do	Ore and quartz crushers	Sept. 18, 1866.
58,090	Fowler, Robert G	Olney, Ill	Car coupling	Sept. 18, 1866.
51,937	Fowler, Samuel T	Brooklyn, N. Y	Safes, fire-proof, manufacture of	Jan. 9, 1866.
56,921	Same	....do	Boots and shoes. (Antedated July 27, 1866)	Aug. 7, 1866.
56,547	Fowler, Talbot T	Washington, D. C	Scales for weighing ice	July 24, 1866.
55,270	Fowler, Thaddeus	Seymour, Conn	Nails, horseshoe	June 5, 1866.
59,380	Fowler, William H	Newburg, N. Y	Latch, door	Nov. 6, 1866.
53,290	Fownes, Charles	Pittsburg, Pa	Kettle, tea, covers, fastening for	Mar. 20, 1866.
	Fox, E., and W. L. Smith. (*See* Tellgman, Ferdinand, assignor.)			
55,438	Fox, Howard Busby	England	Bottle stopper	June 5, 1866.
57,251	Fox, Jacob, assignor to Carr & Co	Minersville, Pa	Umbrella ribs, machine for flattening and punching. (Antedated August 1, 1866.)	Aug. 14, 1866.
	Fox, Jesse, and John E. Crane. (*See* Crane & Fox.)			
53,969	Fox, John, and Samuel C. Ridgaway	Baltimore, Md	Harvesters	Apr. 17, 1866.
	Same. (*See* Taylor, Thos., assignor.)			
58,091	Fox, Leander	New York, N. Y	Mail bags, clasp for	Sept. 18, 1866.
55,844	Fox, Philip L., and George P. Herthel, jr	St. Louis, Mo	Bridges, draw, hydraulic spindle and turning apparatus for	June 26, 1866.
55,480	Fox, Thomas W	New London, Conn	Vessels, device for expelling water from the holds of	June 12, 1866.
54,323	Foy, Lavinia H	Worcester, Mass	Corsets and bustles, combined	May 1, 1866.
57,309	Same	....do	Skirts, hoop	Aug. 21, 1866.
53,433	Foye, Nathaniel W	Cambridge, Mass	Scraper, and knife and fork cleaner	Mar. 27, 1866.
2,359	Fracker, F. T., assignor to the Tucker Manufacturing Company	Boston, Mass	Cloak ease (Design)	July 17, 1866.

2,360	Same	....do	Clock case (Design)	July 17, 1866.
2,365	Same	....do	Chandelier (Design)	July 24, 1866.
2,366	Same	....do	Chandelier (Design)	July 24, 1866.
2,367	Same	....do	Bracket and lamp (Design)	July 24, 1866.
2,368	Same	....do	Clock (Design)	July 24, 1866.
2,369	Same	....do	Light, pendent (Design)	July 24, 1866.
2,432	Same	....do	Lamp, hall, pulley (Design)	Sept. 25, 1866.
	Fracker, Francis T., and R. S. Tay. (*See* Tay & Fracker.)			
54,885	Fradenburg, A. A	Nevada City, Cal	Traps, animal	May 22, 1866.
53,736	Fraily, Henry L., assignor to self and Christian G. Herr	Lancaster, Pa	Cocks, stop, hydrant	Apr. 3, 1866.
	Frame, Nathan T., and Oliver W. Gordon. (*See* Gordon & Frame.)			
59,205	Frame, Thompson	Barnesville, Ohio	Hay, machines for raking and loading	Oct. 30, 1866.
55,845	Francis, John M	Waldo, Ohio	Cans, fruit, tin, mode of making	June 26, 1866.
2,195	Francis, Lewis, assignor to self and Cyrus H. Loutrel	New York, N. Y	Composition of matter for printers' inking rollers, and for other purposes. (Reissue.)	Mar. 13, 1866.
55,951	Same	....do	Composition of matter	June 26, 1866.
	Francisco, Eton. (*See* Travis, John E., assignor.)			
56,334	Francisco, Henry, deceased, by Mary E. Francisco, administratrix	Lake Mills, Wis	Sleigh knee	July 10, 1866.
59,991	Frank, Theodore F	Buffalo, N. Y	Air, apparatus for carburetting	Nov. 27, 1866.
59,000	Frank, Theodore F., assignor to self and David P. Benson	....do	Inhaling gases, apparatus for	Oct. 23, 1866.
	Frankem, Isaac L., and Oliver W. Gordon. (*See* Gordon & Frankem.)			
	Frankish, D., and V. W. Brown. (*See* Brown & Frankish.)			
	Same.			
58,241	Frankle, Jones	Amesbury, Mass	Measuring distance, instruments for	Sept. 25, 1866.
	Franz, Andreas, and George W. Harris. (*See* Harris & Franz.)			
58,242	Frary, James D	New Britain, Conn	Knives and forks, manufacture of	Sept. 25, 1866.
	Frary, J. D., *et al.* (*See* Leonard, John B. H., assignor.)			
	Fraser, D. R. (*See* Gates, P. W., assignor.)			
	Same.			
	Fraser, D. R., *et al.* (*See* Scoville, Gates & Fraser.)			
58,543	Fraser, E. J., assignor to self and Orange Noble	Erie, Pa	Spading machines, rotary	Oct. 2, 1866.
	Fraser, J. (*See* Morehouse, William, assignor.)			
60,498	Fraser, J., and O. S. Garretson	Buffalo, N. Y	Stove-pipe damper	Dec. 18, 1866.
56,741	Frazee, A., and L. W. Smith	Canandaigua, N. Y	Bed bottoms, spring	July 31, 1866.
56,201	Frazee, L. F	South Amboy, N. J	Rafts, life	July 10, 1866.
54,709	Frazer, Charles P., and C. C. Hinchman	Alloways town, N. J / Clarksboro', N. J	Saw-filing machine	May 15, 1866.
55,271	Frazier, Edward J	Peoria, Ill	Car-coupling	June 5, 1866.
53,434	Frazier, John Bodine, and Homer Wicks	Conneautville, Pa	Wells, oil, balance beam for boring	Mar. 27, 1866.
54,710	Fredenburg, J., and G. A. Davidson	Greene, N. Y	Mail bags upon railway cars, mode of receiving and delivering	May 15, 1866.
55,637	Frederick, William	Ashland, Pa	Boot and shoe stretcher	June 19, 1866.
56,202	Same	....do	Quilting frames	July 10, 1866.
57,493	Same	....do	Boot and shoe edge parer	Aug. 28, 1866.
52,840	Free, John W	Richmond, Ind	Mills, fanning	Feb. 27, 1866.
52,841	Same	....do	Separators, grain	Feb. 27, 1866,
55,415	Free, Martin, assignor to Alfred Louderback	Philadelphia, Pa	Planing machines for cutting slats for blinds	June 5, 1866.
56,493	Same	....do	Looms for weaving slat blinds	July 17, 1866.
	Freeborn, Wm., and Wm. J. Fryer, jr. (*See* Fryer & Freeborn.)			
	Freedman, Wm., *et al.* (*See* Magrowitz, Wm., assignor.)			
	Freeman, De Witt C., and Thomas J. Furlong. (*See* Furlong & Freeman.)			
59,582	Freeman, Moses H	Somerville, Mass	Tongs, pipe	Nov. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,481	Freeman, Patrick	Benton county, Iowa	Gates	June 12, 1866.
59,206	Freeman, Terah M	St. Louis, Mo	Vinegar, manufacture of	Oct. 30, 1866.
58,243	Freeman, William J	Spring Fork, Mo	Seeder and cultivator, combined	Sept. 25, 1866.
53,737	Freese, Conrad, assignor to self and Frederick H. Lyon	Aurelius, N. Y	Ditching machine	Apr. 3, 1866.
	Fretty, Jacob. (*See* Armbrust, J. D. M., assignor.)			
58,244	French, Alonzo	Philadelphia, Pa	Lanterns	Sept. 25, 1866.
	French, A. J., and James H. Fowler. (*See* Fowler & French.)			
56,032	French, Carlos	Seymour, Ct	Car springs	July 3, 1866.
54,324	French, Charles A., 2d	Boston, Mass	Buttons	May 1, 1866.
58,722	French, Erastus S., assignor to Joshua W. Partridge	Templeton, Mass	Wood-scraping machines	Oct. 9, 1866.
59,381	French, James C	Monmouth, Ill	Cultivators	Nov. 6, 1866.
60,356	French, John H	Geddes, N. Y	Slate, school and family	Dec. 11, 1866.
58,092	French, Joseph	Pittsburg, Pa	Steam generators, apparatus for inserting fusible plugs in	Sept. 18, 1866.
57,310	French, Smith D	Wabash, Ind	Watches, escapements in	Aug. 21, 1866.
57,886	Frentz, Peter	New Albany, N. Y	Hose, device for carrying	Sept. 11, 1866.
58,093	Freret, James	New Orleans, La	Water elevators	Sept. 18, 1866.
2,489	Freudenau, William, assignor to the Union Steam Mill Company	St. Louis, Mo	Trade mark (Design)	Oct. 9, 1866.
2,501	Same	do	Trade mark (Design)	Oct. 30, 1866.
	Frey, Fred. E. (*See* Widgeon, J. R., assignor.)			
60,499	Frey, John A	Washington, D. C	Lamp burners. (Antedated December 4, 1866.)	Dec. 18, 1866.
53,970	Frey, John A., John Allen, and Gaston D. Smith	do	Barrels and other vessels	Apr. 17, 1866.
58,805	Fridy, John	West Donegal township, Pa.	Cultivators	Oct. 16, 1866.
52,985	Friederick, John H	Rochester, N. Y	Carpet fastener	Mar. 6, 1866.
54,523	Frink, C. L	Rockville, Ct	Packing, rubber	May 8, 1866.
55,638	Same	do	Boilers, gauges for	June 19, 1866.
55,639	Same	do	Boilers, safety valves for	June 19, 1866.
55,640	Same	do	Cocks, gauge	June 19, 1866.
54,524	Frink, C. R	Norwich, N. Y	Hay spreaders	May 8, 1866.
59,001	Same	do	Hay spreaders	Oct. 23, 1866.
	Frink, Samuel C., *et al.* (*See* Sutherland, James W., assignor.)			
58,401	Frisbie, Andrew J	St. Mary's, Ohio	Hay and grain protectors	Oct. 2, 1866.
58,340	Frisbie, Dennis, assignor to self and Samuel C. Goodsell	New Haven, Ct	Hoisting apparatus	Sept. 25, 1866.
	Frisbie, Dennis, and Samuel C. Goodsell. (*See* Goodsell & Frisbie.)			
	Same.			
54,644	Frisbie, Dennis, and Samuel C. Goodsell, assignors to selves and David P. Calhoun.	New Haven, Ct	Press, baling	May 8, 1866.
59,382	Fritz, P. C	Barrytown, N. Y	Mills, grinding, coolers for	Nov. 6, 1866.
54,711	Frohock, Roscoe R	Boston, Mass	Digger, garden	May 15, 1866.
58,629	Frost, Charles H	Peekskill, N. Y	Heaters, sad-iron	Oct. 9, 1866.
53,598	Frost, Clinton T	Medfield, Mass	Paper engines, grinding cylinders of	Apr. 3, 1866.
54,525	Same	do	Straw cutter	May 8, 1866.
2,348	Frost, Edward J	Springfield, Mass	Collars and cuffs (Design)	July 3, 1866.
56,923	Frost, F. N	New Britain, Ct	Bridle bit	Aug. 7, 1866.
59,992	Frost, Francis N	do	Curry combs. (Antedated November 15, 1866)	Nov. 27, 1866.

54,141	Frost, George	Cambridge, Mass	Tree protectors	Apr. 24, 1866.
56,033	Frost, William	Newark, N J	Drills, twist, tool for cutting	July 3, 1866.
60,500	Frot, Jean	France	Engines, for the utilization of ammoniacal gas	Dec. 18, 1866.
58,806	Frue, William B	Houghton, Mich	Table, shaking	Oct. 16, 1866.
57,438	Frühinsfeld, Louis, assignor to self and Wm. O. Headley	Newark, N. J	Bags, travelling, frame for	Aug. 21, 1866.
	Fry, George, *et al.* (*See* Sigerfoos, Sands, and Fry.)			
52,702	Fry, William T	New York, N. Y	Book, pocket	Feb. 20, 1866.
53,804	Fryatt, Henry, and E. C. Edmonds	Buffalo, N. Y	Sawing machines	Apr. 10, 1866.
58,630	Frye, Francis	Time, Ill	Winnowing machine	Oct. 9, 1866.
52,154	Frye, R. E	Manchester, N. H	Buckle	Jan. 24, 1866.
58,402	Fryer, Martin	Greenbush, N. Y	Oar swivel	Oct. 2, 1866.
54,712	Fryer, William, jr	New York, N. Y	Telegraph posts. (Antedated May 1, 1866)	May 15, 1865.
52,986	Fryer, William, jr., and William Fresborn	do	Car wheel, railroad	Mar. 6, 1866.
55,272	Fuller, Andrew	Milford, N. H	Planing machine	June 5, 1866.
54,325	Fuller, Austin	Plymouth, Ind	Bee hives	May 1, 1866.
56,924	Same	do	Hay-loaders	Aug. 7, 1866.
57,494	Fuller, Chauncy W	Earlville, Ill	Funnel measures	Aug. 28, 1866.
	Fuller, Daniel. (*See* Trowbridge, John H., assignor.)			
58,245	Fuller, Henry Wm., assignor to the Bruen Manufacturing Company.	Brooklyn, N. Y	Sewing machines	Sept. 25, 1866.
54,067	Fuller, Jim B, assignor to self, James P. Upham, and Edwin T. Rice.	Norwich, Ct	Spinning machines, rollers for	Apr. 17, 1866.
	Fuller, Lorin L. (*See* Robinson, Daniel T., assignor.)			
55,482	Fuller, Reuben B	do	Cultivating strawberries, vase for	June 12, 1866.
	Fuller, T. H. (*See* Polsey, Arlon M., assignor.)			
51,822	Fuller, Willard Munroe	Chicago, Ill	Gold and silver, from quartz, &c., apparatus for extracting	Jan. 2, 1866.
53,805	Same	do	Amalgamator	Apr. 10, 1866.
55,273	Fulton, H. L	do	Amalgamating gold and silver with lead, apparatus for	June 5, 1866.
52,155	Furlong, Edward P	Westbrook, Maine	Wrenches	Jan. 23, 1866.
59,383	Same	Portland, Maine	Key guard	Nov. 6, 1866.
	Furlong, E. P., *et al.* (*See* Sheldon, Thomas, assignor.)			
	Furlong, E. P., and A. T. Denison. (*See* Denison and Furlong.)			
59,207	Furlong, Thomas T., and DeWitt C. Freeman	St. Louis, Mo	Safes	Oct. 30, 1866.
56,400	Furniss, F. H	Crestline, Ohio	Spittoons, for railroad cars	July 17, 1866.
55,081	Fuzzard, William	Chelsea, Mass	Steam traps	May 29, 1866.
60,167	Same	do	Fibrous materials, machine for sizing	Dec. 4, 1866.
60,168	Fye, John	Hamilton, Ohio	Saddles, harness	Dec. 4, 1866.
55,416	Fye, John, assignor to self and John F. Sutherland	do	Mail-bag	June 5, 1866.
55,816	Fyfe, George	Ottawa, Ill	Table-leaf support	June 26, 1866.
	Gabel, James. (*See* Gregg, H. B., assignor.)			
52,282	Gabel, Nelson	Preble Co., Ohio	Stalk, corn, cutter and stripper	Jan. 30, 1866.
52,703	Gage, C. W	Homer, N. Y	Wagon brakes	Feb. 20, 1866.
	Gage, Henry. (*See* Yielding, Richard, assignor.)			
53,806	Gage, Milo	Medina, N. Y	Stove-pipe drum	Apr. 10, 1866.
52,408	Gail, Titus D	Newport, Ill	Washing machine	Feb. 6, 1866.
54,886	Galaway, William	Sheboygan Falls, Wis	Clothes dryers	May 22, 1866.
52,704	Gale, C. C	Columbus, Ohio	Indicators, railroad station	Feb. 20, 1866.
57,887	Gale, E. G	Holland, Mich	Yokes, ox, bow-pin for	Sept. 11, 1866.
54,326	Gale, Lyman C	Chicago, Ill	Plaster, court, preparation of	May 1, 1866.
2,293	Gale, Warren	Chicopee Falls, Mass	Straw cutters (Reissue)	June 26, 1866.
2,393	Same	do	Straw cutters (Reissue)	Nov. 13, 1866.
59,208	Gallahue, A. C	New York, N. Y	Clothes wringers	Oct. 30, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,556	Gallatin, James, jr	New York, N. Y	Engines, steam, valves for	Feb. 13, 1866.
55,847	Galleth, Anton	do	Sewing machines, feed wheel for	June 26, 1866.
57,116	Same	do	Sewing machine, feed wheel for	Aug. 14, 1866.
	Galley, John F., and Dan Read. (*See* Read & Galley.)			
57,117	Gallup, H. B., and Charles Wood	Watertown, Wis	House drying	Aug. 14, 1866.
	Gally, Merritt, and Howel Topping. (*See* Topping & Gally.)			
54,887	Gammon, Elijah A	Batavia, Ill	Horses from kicking, apparatus to prevent	May 22, 1866.
54,526	Gandy, William H	Lambertville, N. J	Stove, coal	May 8, 1866.
55,008	Gannett, William P., assignor to self and Isaac Gannett	Boston, Mass	Clothes sprinkler	May 22, 1866.
	Gannett, William P. and Isaac. (*See* Drennan, Charles M., assignor.)			
57,888	Gans, James H	Tremont, Ohio	Corn husker	Sept. 11, 1866.
53,599	Ganster, George P	New York, N. Y	Drill, rock. (Antedated March 19, 1866)	Apr. 3, 1866.
54,888	Same	do	Wrenches	May 22, 1866.
55,274	Gard, Benjamin M	Champaign county, Ohio	Brick machine	June 5, 1866.
52,156	Gard, Emery R	Chicago, Ill	Brick machine	Jan. 23, 1866.
59,831	Gard, E. R	do	Brick machine	Nov. 20, 1866.
60,169	Gardiner, Charles O	Springfield, Ohio	Centering and squaring devices	Dec. 4, 1866.
	Gardiner, Jetur. (*See* Monroe, Joshua, assignor.)			
52,557	Gardiner, J. B	Springfield, Mass	Neck ties	Feb. 13, 1866.
55,641	Gardiner, Samuel, jr	New York, N. Y	Electricity, lighting gas by	June 19, 1866.
55,642	Same	do	Electro-magnetism, turning gas cocks by	June 19, 1866.
57,697	Same	do	Electricity, turning on and shutting off gas by	Sept. 4, 1866.
	Gardner, Albert, and Wm. L. Hunter. (*See* Hunter & Gardner.) Extension.			
52,157	Gardner, Edward M	Nantucket, Mass	Ice creeper	Jan. 23, 1866.
	Gardner, George A., and Lemuel P. Jenks. (*See* Jenks & Gardner.)			
55,767	Gardner, John, assignor to Charles T. Grilley	New Haven, Conn	Screws, wood capping	June 19, 1866.
54,889	Gardner, John C	Portland, Oregon	Shackles for prisoners	May 22, 1866.
55,275	Same	Hingham, Mass	Tongs, smiths'	June 5, 1866.
53,529	Gardner, J. W., assignor to the Lampson Goodnow Manufacturing Company.	Shellbourne Falls, Mass	Cutlery, table, manufacture of	Mar. 27, 1866.
56,548	Garfield, Joel	Groton, Mass	Planing machines	July 24, 1866.
2,312	Garner, John C	Ashland, Pa	Whiffletree attachment (Reissue)	July 10, 1866.
59,993	Garrard, William	Fallston, Pa	Butter, milk, and other articles, cooler for preserving. (Antedated November 23, 1866.)	Nov. 27, 1866.
56,925	Garretson, G. P., and J. M. Hoffman	Ripley, Ohio; Miami, Ind	Looms	Aug. 7, 1866.
56,742	Garretson, Isaac H	Richland, Iowa	Bricks, process for making	July 31, 1866.
55,643	Garretson, O. S	Buffalo, N. Y	Butts for blinds	June 19, 1866.
55,644	Same	do	Hinges, shutter	June 19, 1866.
	Garretson, O. S., and Charles B. Clark. (*See* Clark & Garretson.)			
	Garretson, O. S., and J. Fraser. (*See* Fraser & Garretson.)			
53,807	Garrick, Thomas	Providence, R. I	Eyelets, machines for making	Apr. 10, 1866.
54,890	Garrison, David	Philadelphia, Pa	Frames, oval, machines for jointing	May 22, 1866.

55,276	Garrison, N. M	New York, N. Y	Cracker machine	June 5, 1866.
52,558	Gaskill, Roland R	El Paso, Ill	Ploughs, gang	Feb. 13, 1866.
55,848	Same	Mendota, Ill	Roller and corn-stalk cutter	June 26, 1866.
57,889	Same	....do	Ploughs, sulky	Sept. 11, 1866.
52,842	Gassette, Norman T. and Silas B	Chicago, Ill	Cigarette mould and box combined	Feb. 27, 1866.
53,435	Gaston, Henry A	Austin, Nevada	Amalgamator	Mar. 27, 1866.
55,483	Gates, Michael	Paw Paw, Mich	Pruning hooks	June 12, 1866.
53,134	Gates, P. Tenney	Plattsburg, N. Y	Wristbands	Mar. 13, 1866.
2,300	Same	....do	Wristbands (Reissue)	July 10, 1866.
52,641	Gates, P. W., assignor to self and D. R. Fraser	Chicago, Ill	Stamping heads	Feb. 13, 1866.
56,321	Same	....do	Stamping machinery, shoe for	July 10, 1866.
55,277	Gates, Stephen F	Boston, Mass	Drill, rock	June 5, 1866.
	Gates, Stephen F., *et al.* (*See* Brooks, Gates & Burleigh.)			
58,631	Gates, William H	Louisville, Ky	Dental drills	Oct. 9, 1866.
56,549	Gaussoin, Eugene	Baltimore, Md	Ores with chlorine, apparatus for treating. (Antedated July 11, 1866.)	July 24, 1866.
59,002	Gawler, Robert A	Concord, N. H	Carpet fastener	Oct. 23, 1866.
56,550	Gay, Francis	Bedford, Ohio	Gates, farm	July 24, 1866.
57,698	Same	....do	Gates, farm	Sept. 4, 1866.
	Gaylord Manufacturing Company. (*See* Marsh, Edward A., assignor.)			
57,699	Geahr, William	New Holland, Pa	Cultivators	Sept. 4, 1866.
	Gear, H. W. (*See* Dowd, Chauncey, assignor.)			
2,388	Gearhart, J. C	Jersey Shore, Pa	Fence (Design)	Aug. 14, 1866.
60,170	Gebby, William L	New Richland, Ohio	Planter, cotton	Dec. 4, 1866.
53,135	Gecmen, Joseph	Chicago, Ill	Malt, apparatus for sprouting	Mar. 13, 1866.
59,583	Same	....do	Malt kilns	Nov. 13, 1866.
2,177	Gee, William	New York, N. Y	Soda water, apparatus for drawing (Reissue)	Feb. 20, 1866.
52,039	Geer, John A	Hadlyme, Conn	Sawing machines	Jan. 16, 1866.
51,938	Geer, William B., and Almond H. Palmer	Portland, Ill	Wagon box	Jan. 9, 1866.
2,231	Geiger, Leonard, assignor to Charles C. Alger	New York, N. Y	Fire-arms, breech-loading (Reissue)	Apr. 17, 1866.
	Geiser, Peter	Greencastle, Pa	Separators, grain (Extension)	Oct. 5, 1866.
2,377	Geiss, Adolph	Buffalo, N. Y	Burner, gas, for cooking, &c (Reissue)	Oct. 16, 1866.
56,203	Geisse, Charles	Tayeheedah, Wis	Illuminating apparatus	July 10, 1866.
56,204	Same	....do	Heater, gas	July 10, 1866.
58,807	Same	....do	Heaters, gas, burners for	Oct. 16, 1866.
57,042	Geissenhamer, Charles P., assignor to self and Joseph Graff	Pittsburg, Pa	Nuts and washers, machines for making	Aug. 7, 1866.
51,823	Geist, J. M. W	Lancaster, Pa	Libraries, systems for	Jan. 2, 1866.
54,891	Gelston, John	Cincinnati, Ohio	Churn dashers	May 22, 1866.
52,283	Gengembre, H. P	Pittsburg, Pa	Oil, &c., from minerals, process for extracting	Jan. 30, 1866.
52,284	Same	....do	Oil, &c., from minerals, apparatus for extracting	Jan. 30, 1866.
54,713	Same	....do	Screen, fire	May 15, 1866.
59,906	Same	....do	Floor, skating	Nov. 20, 1866.
	George, A. M., and S. Shepherd. (*See* Shepherd & George.)			
53,600	George, John, and Henry Hague	Jackson, Mich	Brick machine	Apr. 3, 1866.
56,926	George, Stephen L	Decatur, Mich	Clothes dryers	Aug. 7, 1866.
60,357	Gerrard, William L	Fort Wayne, Ind	Crib for children	Dec. 11, 1866.
52,559	Gerhardt, William	Pittsburg, Pa	Iron and steel, apparatus for the manufacture of	Feb. 13, 1866.
52,560	Same	....do	Iron and steel, manufacture of	Feb. 13, 1866.
55,082	Gericke, J. H. A	New Orleans, La	Pump, force turbinate	May 29, 1866.
56,401	Gero, E. C	Galesburg, Mich	Horseshoes	July 17, 1866.
56,322	Geroldsek, J. Lewis, assignor to Henry W. Livingston	Livingston, N. Y	Paint	July 10, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,994	Gerry, P. A	Dover, Maine	Sawing machines	Nov. 28, 1866.
53,291	Gest, Joseph J	Cincinnati, Ohio	Car springs	Mar. 20, 1866.
53,292	Same	do	Car springs	Mar. 20, 1866.
56,031	Getchell, John S	Machias, Maine	Windlass, ship's	July 3, 1866.
54,142	Gibbons, Rodmond	San Francisco, Cal	Vests, adjustable back straps for	Apr. 24, 1866.
55,083	Gibbs, Charles	Pittsfield, Vt	Hay loaders	May 29, 1866.
	Gibbs, F. A., *et al.* (*See* Bull, Daniel, assignor.)			
52,409	Gibbs, Josiah H	Grand Rapids, Mich	Boring blinds, machines for	Feb. 6, 1866.
53,971	Gibbs, J. W	New Haven, Conn	Car brake	Apr. 17, 1866.
53,918	Gibbs, Lewis, assignor to Bucher, Gibbs & Co	Canton, Ohio	Plough beams, metallic fastening for	Apr. 10, 1866.
51,824	Gibbs, Luther, and Hiram M. Shaw	Fremont, Ohio	Gates, farm	Jan. 2, 1866.
2,427	Gibbs, Samuel W	Albany, N. Y	Stove, plates of a (Design)	Aug. 28, 1866.
2,246	Gibbs, Samuel W., assignor to Abbott & Noble	do	Range, portable cook's (Design)	Jan. 30, 1866.
2,247	Same	do	Stove, cook's (Design)	Jan. 30, 1866.
2,314	Gibbs, Samuel W., assignor to Samuel H. Ransom	do	Stove, cook's, plates of a (Design)	May 15, 1866.
2,315	Same	do	Stove, parlor, plates of a (Design)	May 15, 1866.
53,436	Gibson, Arrington, and William M. Newcomb	River Falls, Wis. / Clifton, Wis.	Whiffletrees	Mar. 27, 1866.
55,484	Gibson, A. J	Cincinnati, Ohio	Churn dasher	June 12, 1866.
	Gibson, A. J., and W. C. McGill. (*See* McGill & Gibson.)			
52,987	Gibson, Charles D	New York, N. Y	Lights, head, reflectors for	Mar. 6, 1866.
54,714	Same	do	Lights, head, mechanism for adjustment of	May 15, 1866.
	Gibson, David, *et al.* (*See* Sohl & Gibson.)			
53,808	Gibson, Henry C	Camden, N. J	Collar, water-proof	Apr. 10, 1866.
55,849	Gibson, William	Fort Wayne, Ind	Baby jumper	June 26, 1866.
60,626	Gibson, William	New York, N. Y	Photographic use, preparation of paper, &c., for	Dec. 18, 1866.
59,003	Gibson, William O	Charleston, S. C	Plough cultivator	Oct. 23, 1866.
57,700	Gifford, George T	Monmouth, Ill	Cultivators	Sept. 4, 1866.
59,581	Gifford, John, jr	Watertown, N. Y	Hoe, horse	Nov. 13, 1866.
59,585	Same	do	Elevator, hay	Nov. 13, 1866.
53,972	Gilbert, Charles M	Philadelphia, Pa	Bedstead fastening	Apr. 17, 1866.
	Gilbert, John D. (*See* Ward, James M., assignor.)			
58,094	Gilbert, John H	Roxbury, Mass	Bridges	Sept. 18, 1866.
56,205	Gilbert, Philo M	Kewanee, Ill	Sugar, press for the manufacture of. (Antedated May 3, 1866)	July 10, 1866.
60,171	Gilbert, Riley James	Hanover, Wis	Gates	Dec. 4, 1866.
55,768	Gilbert, Thomas S., assignor to self and Perkins, Cook & Co	New Haven, Conn	Skirts, hoop	June 19, 1866.
53,437	Gilbert, William	Catskill, N. Y	Crates for carrying fruit	Mar. 27, 1866.
55,850	Gilbert, William	Bardstown, Ky	Planter, corn, hand	June 26, 1866.
58,246	Gilbert, William	Detroit, Mich	Roofing	Sept. 25, 1866.
57,495	Giles, E. A	New York, N. Y	Watches, stem-winding	Aug. 28, 1866.
2,266	Giles, F. A	do	Watch, top plate of a (Design)	Oct. 27, 1866.
2,281	Same	do	Watch, top plate of a (Design)	Mar. 13, 1866.
	Giles, Henry H. (*See* Aborn, James, assignor.)			
2,290	Giles, William A	Chicago, Ill	Statuette and clock case (Design)	Apr. 3, 1866.
2,291	Same	do	Clock case (Design)	Apr. 3, 1866.

2,292	Same	....do	Bust and clock case (Design)	Apr. 3, 1866.
2,525	Same	....do	Clock case (Design)	Dec. 11, 1866.
2,526	Same	....do	Clock case (Design)	Dec. 11, 1866.
	Gill, Calvin B., and Sylvester G. Mason. (*See* Mason & Gill.)			
	Gill, J., T. and W. (*See* Crowfoot, Joseph, assignor.)			
	Gill, James S., and Henry J. Leasure. (*See* Leasure & Gill.)			
52,158	Gill, John L., jr	Columbus, Ohio	Car trucks, railroad	Jan. 23, 1866.
57,701	Same	....do	Furnace, smelting	Sept. 4, 1866.
	Gill, Joseph P. (*See* Hurford, Joseph, assignor.)			
55,084	Gillam, Sewall	New York, N. Y	Harvester cutters	Jan. 30, 1866.
52,989	Gillaspie, Richard	New Richmond, Ohio	Planters, seed	Mar. 6, 1866.
	Gilleland, Robert, and Alonzo Palmer. (*See* Palmer & Gilleland.)			
	Gillespie, I., *et al.* (*See* Parke, Thomas J., assignor.)			
58,808	Gillespie, James E	Boston, Mass	Steam traps	Oct. 16, 1866.
57,630	Gillespie, James E., assignor to Gillespie Governor Company	....do	Hydraulic governors	Aug. 28, 1866.
2,410	Same	....do	Hydraulic governors (Reissue)	Dec. 4, 1866.
53,809	Gillett, Cyrus F	Sparta, Wis	Bag holders	Apr. 11, 1866.
56,402	Same	....do	Bag holders	July 17, 1866.
	Gillet, G. W., *et al.* (*See* Prosser, T. T., assignor.)			
	Same.			
52,561	Gillett, R. P	....do	Axles for vehicles and journals for machinery	Feb. 13, 1866.
56,035	Same	....do	Brush, scrubbing	July 3, 1866.
	Gillett, S. M., and W. B. Niles. (*See* Niles & Gillett.)			
59,586	Gillett, W. and W. S	Stowe, Vt	Mop wringer	Nov. 13, 1866.
54,527	Gilliam, Edward	Allegheny, Pa	Fruit gatherers	May 8, 1866.
54,528	Same	....do	Insects, apparatus for exterminating	May 8, 1866.
55,278	Same	....do	Hay forks, horse	June 5, 1866.
52,285	Gilliam, William H	Seattle, Washington Ter	Saws to their handle, manner of attaching	Jan. 30, 1866.
52,990	Gilliland, A. L. and B. F	Littleton, Ill	Ploughs, gang	Mar. 6, 1866.
59,832	Gillis, C. W	San Antonio, Texas	Press, baling	Nov. 20, 1866.
56,036	Gillmore, Theophilus	St. Louis, Mo	Churns	July 3, 1866.
58,809	Gillmore, John, jr., and Aaron W	Utica, Pa	Well tubes, mode of sinking	Oct. 16, 1866.
53,601	Gilman, Charles H	Portland, Maine	Fastenings, shutter and blind	Apr. 3, 1866.
	Gilman, Isaiah. (*See* Lang, E. M., assignor.)			
55,485	Gilman, William	Ottawa, Ill	Corn shellers	June 12, 1866.
53,919	Gilmore, Aaron, assignor to self, B. H. Austin, jr., and Dolphus Austin.	Buffalo, N. Y	Coffer dams	Apr. 11, 1866.
60,501	Gilmore, Allen	Fort Atkinson, Wis	Diggers, potato	Dec. 18, 1866.
59,833	Gilmore, E. T	Springfield, Mass	Preserving oysters	Nov. 13, 1866.
2,283	Gilmore, Henry H., assignor to Allen Beach	Boston, Mass	Tongs, pipe (Reissue)	June 12, 1866.
52,159	Gilmore, James S	Millersburg, Ill	Ploughs, cultivator	Jan. 23, 1866.
53,602	Gilmore, Lucius M	Janesville, Wis	Drill, rock	Apr. 3, 1866.
58,632	Gilpatric, C. L	South Dedham, Mass	Grater, nutmeg	Oct. 9, 1866.
55,645	Gilson, David	Nashua, N. H	Legs, artificial	June 19, 1866.
57,890	Gilson, Samuel D	Oswego Falls, N. Y	Fuel, artificial, manufacture of	Sept. 11, 1866.
56,206	Gilson, Samuel D. and Samuel	....do	Peat machine	July 10, 1866.
55,279	Gilson, Theodore, and Nicholas Martin	Port Washington, Wis	Ploughs	June 5, 1866.
55,486	Gipson, R	Shelby, Ohio	Clothes wringer	June 12, 1866.
54,715	Girardin, Julien C	Philadelphia, Pa	Sewing machines, tension pully for	May 15, 1866.
60,502	Gisborne, John Sacheverell	England	Signalling apparatus	Dec. 18, 1866.
52,801	Gisbourne, Thomas Matthew	....do	Brick machine	Feb. 20, 1866.
52,787	Gessinger, Samuel, assignor to self and Peter Kolbecker	Allegheny, Pa	Brush, blacking, and boot-jack	Feb. 20, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
60,503	Gessinger, Samuel, assignor to self and David E. Hall	Lawrenceville, Pa	Billiard cues, clamps for gluing the tips on	Dec. 18, 1866.
57,118	Githens, George M	New York, N. Y	Steam generators, water gauges for	Aug. 14, 1866.
52,843	Gitt, Daniel D	Arendtsville, Pa	Harvesters	Feb. 27, 1866.
	Gladding, George S., and Noah C. Perry. (*See* Perry & Gladding.)			
	Gladwin, P. A. (*See* Arnold, Wibur F., assignor.)			
55,582	Gladwin, Porter A., assignor to self and Horace M. Lee	Boston, Mass	Locks, keys for	June 12, 1866.
56,403	Gladding, Russell S	Meriden, Conn	Cutlery, &c., machine for grinding	July 19, 1866.
57,119	Glasson, James	Brooklyn, N. Y	Hoes	Aug. 14, 1866.
57,891	Gleason, Cyrenius	Buffalo, N. Y	Yeast cake dryer	Sept. 11, 1866.
59,587	Gleason, Elliot P	New York, N. Y	Lighter, cigar	Nov. 13, 1866.
59,588	Same	do	Burner, gas, chimney holder for	Nov. 13, 1866.
54,892	Gleason, Franklin A	Brooklyn, N. Y	Washing machine	May 22, 1866.
55,851	Gleason, Isaac C	Middletown, Conn	Fruit baskets	June 26, 1866.
53,438	Gleason, L. R	Dundee, N. Y	Evaporator	Mar. 27, 1866.
54,327	Glenn, Wesley	Philadelphia, Pa	Clamps, planking	May 1, 1866.
59,384	Glidden, Carlos	Milwaukie, Wis	Car spring	Nov. 6, 1866.
60,172	Same	do	Ploughs	Dec. 4, 1866.
	Glines, H. M., and Benjamin F. Porter. (*See* Porter & Glines).			
55,646	Glover, A. B	Derby, Conn	Bolt-heading machine	June 19, 1866.
	Glover, Boyd, and Thomas G. Odell. (*See* Odell & Glover.)			
60,358	Glover, Thomas	Woodbury, N. J	Fences	Dec. 11, 1866.
60,627	Goble, T. L	Orange, N. Y	Clothes pin	Dec. 18, 1866.
60,359	Goddard, Artemas W	Clinton, Mass	Stalks, hemp and cotton, machine for pulling	Dec. 11, 1866.
56,037	Goddard, C. L	New York, N. Y	Wool-burring machine. (Antedated June 19, 1866)	July 3, 1866.
56,038	Same	do	Wool-burring and carding machines, cylinders for. (Antedated June 19, 1866.)	July 3, 1866.
	Goddard, C. L. (*See* Campbell, Thomas A., assignor.)			
59,385	Godden, Christopher	Paterson, N. J	Vehicles, wheels for	Nov. 6, 1866.
57,892	Godfrey, Freeman	Grand Rapids, Mich	Furnace for calcining gypsum	Sept. 11, 1866.
52,160	Godfrey, Joseph S., E. J., and Russel	Leslie, Mich	Washing machine	Jan. 23, 1866.
51,939	Godfrey, Solomon	Peoria, Ill	Mill, flouring, belts for	Jan. 9, 1866.
53,293	Same	do	Dryer, grain	Mar. 20, 1866.
53,603	Same	do	Mills, grinding	Apr. 3, 1866.
60,173	Goetze, Gottlieb F	New York, N. Y	Ornamenting mouldings, machine for	Dec. 4, 1866.
	Goff, Darius, and Darius L. (*See* Droun, Otis E., assignor.)			
57,893	Goff, J. M	Ionia, Ill	Stalks, corn, standing, machine for cutting	Sept. 11, 1866.
57,819	Goff, Lucius H., assignor to Thomas C. Winslow	St. Albans, Vt	Lifter, barrel	Sept. 4, 1866.
55,769	Golay, George W., assignor to self and Eli T. Ogle	Vevay, Ind	Broom head	June 19, 1866.
58,633	Gold, Willis D	Philadelphia, Pa	Wrenches	Oct. 9, 1866.
52,040	Golding, Charles H	Virginia, Nevada	Composition for coating amalgamating pans, &c	Jan. 16, 1866.
57,702	Goldstone, Samuel	Philadelphia, Pa	Caps	Sept. 4, 1866.
54,143	Goodale, William H	Colton, N. Y	Upholstering springs, attachment for	Apr. 24, 1866.
	Goodenough Horse Shoe Company. (*See* Goulding, William F., assignor.)			
55,439	Goodier, James, and J. F. Kilshaw	England	Paddle-wheel	June 5, 1866

56,323	Gooding, James B., assignor to Stillman White	Waltham, Mass	Calipers and dividers, process of making	July 10, 1866.
	Gooding, William, and Aretus A. Wilder. (*See* Wilder & Gooding.)			
53,530	Goodman, Joseph, assignor to self and Richard W. Reynolds	Pawtucket, R. I.	Knitting machines	Mar. 27, 1866.
58,740	Goodman, William	St. John's, N. B.	Windlass, ship's	Oct. 10, 1866.
	Goodman, William. (*See* Holland, William H., assignor.)			
	Goodrich, E. D. (*See* Blood, A. E. and J. B., assignors.)			
58,851	Goodrich, George D. and Horace A	Joliet, Ill	Pipe, clay, dies	Oct. 16, 1866.
56,404	Goodrich, H., and G. R. Edwards	Shawneetown, Ill	Engines, steam	July 17, 1866.
60,360	Goodrich, H. C	Chicago, Ill	Sewing machine guides	Dec. 11, 1866.
	Goodrich, H. C., and Thomas A. Chandler. (*See* Chandler & Goodrich.)			
	Goodrich, James, and Elbridge G. Stanley. (*See* Stanley & Goodrich.)			
58,940	Goodrum, Thomas, assignor to Albert T. Manchester	Providence, R. I	Book binder, school boys'	Oct. 16, 1866.
53,295	Goodsell, Daniel A	Glen Cove, N. Y	Sand, machine for sifting	Mar. 20, 1866.
	Goodsell, Samuel C. (*See* Frisbie, Dennis, assignor.)			
58,022	Goodsell, Samuel C., assignor to self and Bennett Hotchkiss	New Haven, Conn	Flutes, &c	Sept. 11, 1866.
	Goodsell, Samuel C., and Dennis Frisbie. (*See* Frisbie and Goodsell.)			
54,467	Goodsell, Samuel C., and Dennis Frisbie, assignors to selves, H. B. Bigelow, and D. P. Calhoun.	....do	Hoisting apparatus	May 1, 1866.
58,341	Goodsell, Samuel C., and Dennis Frisbie, assignors to selves and D. P. Calhoun.	....do	Press, cotton and hay	Sept. 25, 1866.
54,816	Goodspeed, George N., assignor to T. S. Page	Winchendon, Mass	Sewing machines, feeding mechanism for	May 15, 1866.
59,386	Goodwillie, D. H	New York, N. Y	Inhalers	Nov. 6, 1866.
57,496	Goodwin, George P	Lowell, Mass	Spool and stand, twine	Aug. 28, 1866.
58,634	Goodwin, M. J	Boston, Mass	Railway track clearer	Oct. 9, 1866
58,403	Goodwin, Richard J. P	Manchester, N. H	Splints, surgical. (Antedated September 24, 1866.)	Oct. 2, 1866.
51,996	Goodwin, William, assignor to self and William H. Holland	Boston, Mass	Engines, steam, rotary	Jan. 9, 1866.
58,404	Goodwin, W. C	Hamden, Conn	Fish hooks	Oct. 2, 1866.
53,136	Goodwin, William F	Washington, D. C	Harvester rake	Mar. 13, 1866.
53,137	Same	....do	Harvesters	Mar. 13, 1866.
53,138	Same	....do	Grain binders	Mar. 13, 1866.
55,487	Same	....do	Harvester rakes	June 12, 1866.
	Goodwin, W. F., *et al.* (*See* Stiles, Ezra, assignor.)			
57,120	Goodyear, Andrew	Springport, Mich	Barrel hoops, machine for cutting	Aug. 14, 1866.
2,169	Goodyear, Charles, deceased, by Charles Goodyear, executor	New York, N. Y	Rubber, India, making hollow articles of. (Div. A of reissue.)	Feb. 13, 1866.
2,170	Same	....do	Rubber, India, making hollow articles of. (Div. B of reissue.)	Feb. 13, 1866.
55,852	Goodyear, Charles, jr	....do	Boots and shoes, lacing for	June 26, 1866.
55,853	Same	....do	Boots and shoes, lacing for	June 26, 1866.
	Goodyear, Charles, jr. (*See* Autenriette, Jacob, assignor.) Reissue.			
53,810	Goodyear, Jacob	Carlisle, Pa	Pumps	Apr. 10, 1866.
	Goodyear Metallic Rubber Shoe Company. (*See* Wales, Thomas C., assignor.) Reissue.			
55,280	Goodyear, R. A	New Haven, Conn	Lamps	June 5, 1866.
	Goodyear, Robert B., and Barton H. Jenks. (See Jenks & Goodyear.)			
	Same			
52,041	Gootman, Mayer	New York, N. Y	Billiard indicator	Jan. 16, 1866.
56,743	Gordon, Alexander	Rochester N. Y	Straw-cutters	July 31, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,635	Gordon, Alexander	Rochester, N. Y.	Hay forks, horse	Oct. 10, 1866.
60 174	Gordon, E. C	Sevastopol, Ind	Fence	Dec. 4, 1866.
60,304	Gordon, George P	Brooklyn, N. Y	Printing presses	Dec. 18, 1866.
52,042	Gordon, J. Parker	West Garland, Me	Bit-holders for braces	Jan. 16, 1866.
56,207	Gordon, N. W	Waupun, Wis	Vehicles, coupling for	July 10, 1866.
52,161	Gordon, Oliver W., and Nathan T. Frame	Salem, Iowa	Looms	Jan. 23, 1866.
56,494	Gordon, W. J., assignor to J. S. Mason & Co	Philadelphia, Pa	Metal, sheet, together, machines for securing the ends of strips of	July 17, 1866.
59,507	Same, assignor to John Haworth	do	Photographs, roller for finishing	Nov. 6, 1866.
57,497	Gorham, D. A	Lawrence, Mass	Whiffletrees	Aug. 28, 1866.
58,095	Gortner, Henry	Deavertown, Ohio	Cane juice, apparatus for separating gum from	Sept. 18, 1866.
	Gorton, A. H. (*See* Snook & Patchell, assignors.)			
	Gott, George L., and Gustav Lautenschlager. (*See* Lautenschlager & Gott.)			
	Gott, Joseph E., and James Emery. (*See* Emery & Gott.)			
57,651	Gottegetreu, R., assignor to Lennig & Clemm	Bavaria	Etching grounds, mode of producing	Aug. 28, 1866.
57,121	Gottfried, Heinrich	New York, N. Y	Straw-cutters	Aug. 14, 1865.
54,328	Gottfried, Henry	do	Pumps, pneumatic	May 1, 1866.
57,252	Goty, Charles, and Augustus Guillemin, assignors to selves, Charles Fix and J. Oppenheimer.	Cincinnati, Ohio	Tanners' waste, mode of utilizing	Aug. 14, 1866.
58,636	Goucher, Samuel J	Philadelphia, Pa	Shovels	Oct. 9, 1866.
52,642	Goucher, I. J., assignor to William Foreman	do	Well-boring apparatus	Feb. 13, 1866.
53,811	Goudy, G. F. and T. M	Independence, Ohio	Racks, sheep	Apr. 10, 1866.
	Gould, Francis H. and Roscoe J. (*See* Dennisson, John N., assignor.)			
	Same.			
	Same.			
52,844	Gould, James	Lexington, Mass	Fertilizer	Feb. 27, 1866.
2,301	Gould, John C	Boonton, N. J	Nail-plate feeding machines (Reissue)	July 10, 1866.
58,405	Same	do	Springs, door and gate	Oct. 2, 1866.
52,991	Gould, Levi A	Santa Clara, Cal	Pumps	Mar. 6, 1866.
58,637	Gould, Simeon L	Skowhegan, Maine	Nail machines	Oct. 9, 1866.
59,589	Goulding, George P., Daniel Clark, and Thomas Dickinson	Buffalo, N. Y	Signals, fog	Nov. 13, 1866.
58,810	Goulding, Henry	Dedham, Mass	Boats, device for lowering	Oct. 16, 1866.
56,922	Goulding, John	Worcester, Mass	Spinning mules and jacks	May 8, 1866.
57,631	Goulding, William F., assignor to the Goodenough Horseshoe Company.	Providence, R. I	Horseshoes, machine for bending	Aug. 28, 1866.
	Gourlay, W. N., *et al.* (*See* Howarth, David, assignor)			
56,927	Gousha, Napoleon B	Baltimore, Md	Hydrants	Aug. 7, 1866.
53,139	Gove, John C	Cleveland, Ohio	Pot, coffee	Mar. 13, 1866.
55,085	Same	do	Refrigerator	May 29, 1866.
	Gove, William A., and Peter Taylor. (*See* Taylor & Gove.)			
57,122	Govern, William A	Holyoke, Mass	Wool and woollen goods, cleaning	Aug. 14, 1866.
	Gowell, S. B. (*See* Prescott, James F., assignor.)			
56,744	Gowen, William	Warsaw, Wis	Washing machines	July 31, 1866.
54,329	Gower, James	Ironton, Ohio	Railroad rails, three-headed, rolls for manufacturing	May 1, 1866.

53,086	Graccy, Robert	Pittsburg, Pa	Tools, oil socket joint of	May 29, 1866.
60,175	Graezzle, G., assignor to Jacob Roop and Stephen Hughes	Hamilton, Ohio	Brick machine	Dec. 4, 1866.
54,498	Graff, E. B	Baltimore, Md	Railroad rails, fastening for	Aug. 28, 1866.
	Graff, Joseph. (*See* Geissenhainer, Charles P., assignor.)			
	Same. (*See* Keeler, Edward L., assignor.)			
56,551	Graffham, Gabriel	Lawrenceville, Ill	Bechives	July 24, 1866.
55,281	Graham, Benjamin	Lyons, Iowa	Churns	June 5, 1866.
	Graham, D. M., and H. K. Taylor. (*See* Taylor & Graham.)			
	Same.			
2,367	Graham, Edmund H	Manchester, N.H	Looms, picker-staff motion for (Reissue)	Oct. 2, 1866.
	Graham, James, and James C. McLelland. (*See* McLelland & Graham.)			
	Graham, R. A., and Jacob P. Rees. (*See* Rees & Graham.)			
56,405	Granger, Francis	Lockport, Ill	Harrows	July 17, 1866.
2,395	Same	do	Harrow (Reissue)	Nov. 20, 1866.
53,812	Granger, James	Zanesville, Ohio	Paddle-wheels	Apr. 10, 1866.
	Granier, Emile. (*See* Loewenberg, Henry, assignor.)			
58,023	Grant, B. A., assignor to self and J. B. Coats	Mount Pleasant, Iowa	Spinning machines, hand	Sept. 11, 1866.
57,311	Grant, James B	New York, N. Y	Oil, apparatus for distilling	Aug. 21, 1866.
52,245	Grant, Joseph, assignor to self and Henry T. Grant	Providence, R. I	Brick machine	Jan. 23, 1866.
56,495	Grant, Lewis F., assignor to self, Joseph R. Brown, and Lucien Sharpe.	Thomaston, Conn	Gear cutters, making	July 17, 1866.
57,253	Grant, Sam'l A., assignor to Burlington Manufacturing Company.	Burlington, Conn	Fans, ladies'	Aug. 14, 1866.
59,907	Grant, Thomas R	Newark, Ohio	Piston-rod, packing	Nov. 20, 1866.
52,705	Grant, W. T	Jacksonville, Ill	Mop and scourer	Feb. 20, 1866.
57,703	Same	do	Mop and scourer	Sept. 4, 1866.
59,590	Gratten, E	Williamstown, Mich	Measure and funnel, combined	Nov. 13, 1866.
	Graves, A., *et al.* (*See* Edgett, Andrew J., assignor.)			
58,638	Graves, Daniel	Seneca, Ill	Stove, cooking	Oct. 9, 1866.
	Graves, F. B., *et al.* (*See* Lyons, James B., assignor.)			
	Same.			
56,039	Graves, John H	Rochester, N. Y	Gates	July 3, 1866.
2,385	Gray, C. E., assignor to Charles J. Everett and Radcliffe B. Lockwood.	New York. N. Y	Lard, tallow, &c., apparatus for rendering (Reissue)	Oct. 30, 1866.
	Gray, E. H., and D. J. Kirkman. (*See* Kirkman & Gray.)			
53,439	Gray, Harman	Sugar Creek, Wis	Roller, garden, for destroying insects	Mar. 27, 1866.
59,743	Gray, Isaac J	Seville, Ohio	Gates	Nov. 20, 1866.
60,176	Gray, J. H	Boston, Mass	Millstones, machines for picking	Dec. 8, 1866.
54,068	Gray, Joshua, assignor to self, S. S. Bucklin and W. G. Langdon.	Medford, Mass	Fire-arms, magazine	Apr. 17, 1866.
2,249	Gray, Joshua, assignor through mesne assignments to self, S. S. Bucklin, and William G. Langdon.	do	Fire-arms, magazine (Reissue)	May 22, 1866.
	Gray, J. C., and D. H. Burket. (*See* Burket & Gray.)			
55,647	Gray, J. S. and H. F	Chelsea, Mass	Mirrors, means for hanging	June 19, 1866.
52,162	Gray, Lyman	Pittsburg, Pa	Shafting, coupling for	Jan. 23, 1866.
	Gray, McCrellis. (*See* Horrall, W. A., assignor.)			
58,342	Gray, Richard H., assignor to self and S. Abrams	Greenville, Ala	Screws, lifting and pressing	Sept. 25, 1866.
52,163	Gray, Solomon L	Boston, Mass	Collars, paper	Jan. 23, 1866.
60,177	Gray, Thomas	England	Hemp, flax, &c., mode of treating	Dec. 4, 1866.
56,496	Greacen, John, jr., Ambrose Foster, and John H. Cooper, assignors to the American Building Block Co	New York, N. Y Philadelphia, Pa	Moulding materials admitting of cohesion, machine for	July 17, 1866.
51,825	Green, Calvin L	Johnson's Creek, N. Y	Planters, corn, hand	Jan. 2, 1866.
	Green, Charles, and Isaac Gregg. (*See* Gregg & Green.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,209	Green, E. T	Stoneham, Mass	Last. (Antedated Oct. 20, 1866)	Oct. 30, 1866.
57,123	Green, H. D	Portland, Oregon	Gas, illuminating, manufacture of	Aug. 14, 1866.
59,004	Green, Henry D	do	Gas, illuminating, manufacture of	Oct. 23, 1866.
	Green, Hiram E, and Edward J. Stephens. (*See* Stephens & Green.)			
58,544	Green, Isaac, T., assignor to self and C. H. Berry	Milford, Conn	Hat-pressing machine	Oct. 2, 1866.
53,294	Green, Jacob H	North Waterford, Maine	Stump or stone extractor	Mar. 20, 1866.
56,208	Green, John	Lowell, Mass	Printing textile fabrics, machine for	July 7, 1866.
59,209	Green, John	Joliet, Ill	Spinning wheel, hand	Oct. 30, 1866.
55,952	Green, John, assignor to self and James W. Barker	Norwalk, Ohio	Separators, grain	June 26, 1866.
59,005	Green, Jonathan J	Grand Rapids, Mich	Washing machine	Oct. 23, 1866.
	Green, J. P., and George H. Manlove. (*See* Manlove & Green.) Same.			
	Green, J. T., and J. S. Elkins. (*See* Elkins & Green.)			
	Green, M. S., and Jesse S. Butterfield. (*See* Butterfield & Green.)			
60,361	Green, N. W	Cortland Village, N. Y	Tool, grappling	Dec. 11, 1866.
52,286	Green, Virgil D	Watertown, Wis	Valves, slide, balanced	Jan. 30, 1866.
54,716	Same	do	Steam generators, safety valves for	May 15, 1866.
52,992	Green, Wellington	Kinzua, Pa	Cutting box	Mar. 6, 1866.
53,140	Green, William	Cleveland, Ohio	Roofing cement	Mar. 13, 1866.
55,087	Same	do	Roofing cement	May 29, 1866.
56,042	Same	do	Roofing cement	July 3, 1866.
	Green, C. O., and F. A. Sheldon. (*See* Hyde, James R., assignor.) Design.			
55,282	Green, Darwin	New York, N. Y	Wood, machines for bundling	June 5, 1866.
	Green, J. M. D., *et. al.* (*See* Colburn, Wells L., ass'r.) Reissue. Same.			
	Greene, Stephen, and George J. Hill. (*See* Hill & Greene.)			
56,041	Green, William A	Troy, N. Y	Range and furnace combined	July 3, 1866.
2,433	Same	do	Brush, blacking, handle (Design)	Sept. 25, 1866.
	Greenhalgh, James	Woonsocket Falls, R. I	Looms, mode of counter balancing harnesses in. (Extension)	Oct. 15, 1866.
58,801	Greenleaf, George D	Depauville, N. Y	Stove and drum, radiating	Oct. 16, 1866.
52,643	Greenleaf, Joseph, assignor to John M. Marlin and George H. Snow.	New Haven, Conn	Darning spools	Feb. 13, 1866.
59,908	Greenleaf, J. H., assignor to self and Isaac N. Dann	do	Boot heels	Nov. 20, 1866.
54,529	Greenleaf, William	Terre Haute, Ind	Hubs, securing boxes to	May 8, 1866.
	Greenough, J. J. (*See* Warner, James, assignor.) Reissue.			
59,211	Greenside, Barton	Fort Dodge, Iowa	Hinge, gate	Oct. 30, 1866.
57,312	Greenwalt, A. B	Baltimore, Md	Carriages, &c., springs for	Aug. 21, 1866.
53,604	Greenwood, J. T., sr	Beloit, Wis	Washing machine. (Antedated March 13, 1866)	Apr. 3, 1866.
	Greenwood, M., & Co. (*See* Zeuner, Charles, assignor.) Design.			
52,562	Greer, W. H	Chicago, Ill	Washing machine	Feb. 13, 1866.
57,124	Gregg, Franklin S	Cincinnati, Ohio	Taps and dies	Aug. 14, 1866.
	Gregg, H. B., and Newton Brown. (*See* Brown & Gregg.)			
58,167	Gregg, H. B., assignor to self and James Gavel	Camden, Ohio	Clamps for planking floors	Sept. 18, 1866.

59,212	Gregg, Isaac	Philadelphia, Pa	Brick machine	Oct. 30, 1866.
55,583	Gregg, Isaac, and Charles Green, assignors to Isaac Gregg	....do	Brick machine	June 12, 1866.
59,995	Gregg, Samuel	Boston, Mass	Spectacles	Nov. 27, 1866.
57,125	Gregory, George W	Binghamton, N. Y	Pulley attachment for raising weight. (Antedated Feb. 14, 1866.)	Aug. 14, 1866.
	Gregory, G. W., and B. F. Hisert. (*See* Jarrett, T. T., assignor.) Disclaimer.			
	Gregory, Ira W. (*See* Watson, William C., assignor.)			
	Greig, David, *et. al.* (*See* Fowler, Greig & Noddings.)			
	Same. (*See* Fowler, Worby & Greig.)			
55,488	Grieves, John	Brooklyn, N. Y	Drill, rock	June 12, 1866.
58,191	Grenell, Silas	Mokena, Ill	Harrow, rotating	Sept. 18, 1866.
57,057	Gresham, James	Great Britain	Boilers, injectors for	Aug. 7, 1866.
	Gresham, James, and John Robinson. (*See* Robinson & Gresham.)			
	Grether, John, and Charles Gschwind. (*See* Gschwind & Grether.)			
56,745	Gribben, John	Allegheny, Pa	Boltheads, square, dies for making	July 31, 1866.
57,313	Same	....do	Boltheading, machines, dies for	Aug. 21, 1866.
56,209	Gridley, F. C	Hudson, Wis	Weather strip for doors	July 10, 1866.
54,330	Gridley, Henry H	Auburn, N. Y	Saw mills, head blocks for	May 1, 1866.
53,917	Gridley, J. B	Louisville, Ky	Press, baling	Apr. 10, 1866.
59,006	Same	Albany, N. Y	Brick machine	Oct. 23, 1866.
59,007	Gridley, James H	Washington, D. C	Bale, cotton, ties	Oct. 23, 1866.
	Gridley, Nelson C. (*See* Kasson, A. C., assignor.)			
54,893	Grier, W. W., and R. H. Boyd	Hulton, Pa	Auger bits, machine for making	May 22, 1866.
56,928	Same	....do	Scissors	Aug. 7, 1866.
52,164	Grieves, John	Brooklyn, N. Y	Well, drills for	Jan. 23, 1866.
52,246	Griffin, A. J., assignor to self and William T. Vose	Lowell, Mass	Stove, hydro-carbon	Jan. 23, 1866.
56,143	Same	....do	Gases from petroleum and water, apparatus for producing and burning.	July 3, 1866.
59,909	Griffin, Caleb H., assignor to self and W. E. P. Smyth	Chelsea, Mass	Boiler feeders	Nov. 26, 1866.
53,813	Griffin, Charles E., and Thomas Marsh	Smithfield, R. I	Spindles, steps for	Apr. 10, 1866.
	Griffin, G. H , and S. B. Pangborn. (*See* Pangborn & Griffin.)			
	Griffin, James F. (*See* Burns, William, assignor.)			
	Same. (*See* Brown, Franklin H., assignor.)			
	Same.			
55,283	Griffin, John	Louisville, Ky	Cotton, device for picking	June 5, 1866.
57,314	Griffin, Thomas	Roxbury, Mass	Collars, paper, self-sealing button-holes, patches for	Aug. 21, 1866.
	Griffith, John M., *et. al.* (*See* Fitzhugh, B. G., assignor.)			
53,440	Griffith, Amos E	Philadelphia, Pa	Furnace for treating auriferous ores	Mar. 27, 1866.
51,826	Griffith, John Willis	Brooklyn, N. Y	Wood bending machines	Jan. 2, 1866.
51,827	Same	....do	Wood bending	Jan. 2, 1866.
54,894	Griffiths, Frank P	Philadelphia, Pa	Filters	May 22, 1866.
57,632	Griggs, Henry C., assignor to Smith & Griggs	Waterbury, Conn	Buckles	Aug. 28, 1866.
56,929	Griggs, J. A	Charleston, Ill	Saw mills, head-blocks for	Aug, 7, 1866.
	Grilley, Charles T	New Haven, Conn	Screws, capping of (Extension)	Apr. 9, 1866.
55,284	Same	....do	Screws, wood, capping	June 5, 1866.
2,284	Same	....do	Screws, wood (Reissue)	June 12, 1866.
59,591	Same	....do	Screws, wood	Nov. 13, 1866.
	Same (*See* Gardner, John, assignor.)			
	Grime, B. F., and J. B. Beall. (*See* Beall & Grime, assignors.)			
52,706	Grimes, William C	Philadelphia, Pa	Hullers, grain	Feb. 20, 1866.
53,814	Grimes, W. E	Allen, Mo	Racks, hay	Apr. 10, 1866.
60,505	Grimshaw, William D	Newark, N. J	Capstan	Dec. 18, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,940	Grinnell, A. L.	Des Moines, Iowa	Gates	Jan. 9, 1866.
54,717	Griscom, Powell, and J. H. Miller	Baltimore, Md	Lime kiln	May 15, 1866.
	Grissoin, Henry, and Amos Durant. (*See* Durant & Grissoin.)			
56,210	Griswold, Catharine A	Willimantic, Conn	Corsets, skirt-supporting	July 10, 1866.
	Griswold, Henry J., and Henry A. Clark. (*See* Clark & Griswold.)			
58,812	Griswold, Joseph W., and John Sigwalt, jr	Chicago, Ill	Collars, paper, machines for making	Oct. 16, 1866.
54,895	Griswold, P.	Hudson, Mich	Separators, grain	May 22, 1866.
53,815	Griswold, Victor M.	Peekskill, N. Y	Printing photographic pictures, process and composition for	Apr. 10, 1866.
55,489	Groat, Warner	Green Island, N. Y	Mat for cars, wooden	June 12, 1866.
56,930	Groel, Nicholas	Newark, N. J	Bag, travelling, frames	Aug. 7, 1866.
52,707	Groom, Elbert E	New York, N. Y	Valves, steam and cut off	Feb. 20, 1866.
53,758	Gros, Jules	Franee	Gas generators, compressed	Apr. 3, 1866.
59,834	Gross, Isaac, and J. M.	New Galena, Pa	Wagon brake	Nov. 20, 1866.
2,301	Grosskoff, H. H	Philadelphia, Pa	Stamp, hand	May 1, 1866.
54,331	Grout, John R	Detroit, Mich	Valves, slide, balanced	May 1, 1866.
56,552	Same	do	Furnaces, reverberatory and other blast	July 24, 1866.
56,746	Same	do	Furnace, cupola or blast	July 31, 1866.
57,315	Groux, Emile	Rome, N. Y	Block escapements	Aug. 21, 1866.
59,592	Grove, A. F	James Creek, Pa	Cultivator	Nov. 13, 1866.
53,605	Grover, Demas L	Groton, N. Y	Stove pipe damper	Apr. 3, 1866.
	Grover, William B., and O. K. Collins. (*See* Collins & Grover.)			
	Grover, William O., and William E. Baker	Boston, Mass	Sewing machines (Extension)	June 2, 1866.
	Grover, James. (*See* Danby, John, assignor.)			
53,606	Gruber, John P	New York, N. Y	Filtering apparatus	Apr. 3, 1866.
57,499	Same	do	Pumps	Aug. 28, 1866.
53,607	Gruger, Pearson E., and John P	Lancaster, Pa	Indicators, railroad station	Apr. 3, 1866.
58,406	Grun, Christian	New York, N. Y	Skirts, lady's elevators for	Oct. 2, 1866.
52,845	Grun, John C	Peoria, Ill	Boots and shoes, edge plane for	Feb. 27, 1866.
57,894	Grundmann, Theodore	St. Anthony, Minn	Vinegar, apparatus for making	Sept. 11, 1866.
57,126	Gsehwind, Charles, and John Grether	Union Hill, N. J	Cigar holder and hat hook	Aug. 14, 1866.
59,387	Gsehwind, John, and Charles	New York, N. Y	Registers, cars	Nov. 6, 1866.
58,247	Guard, Chauncey H	do	Hubs to axles, attaching. (Antedated September 17, 1866.)	Sept. 25, 1866.
56,406	Guckian, James	Camden, Ohio	Stripping and cutting sorghum, implement for	July 17, 1866.
54,332	Guernsey, Samuel B	Chicago, Ill	Broomhead	May 1, 1866.
60,362	Guernsey, Samuel B., assignor to self and Richard S. Thain	do	Washstands, portable. (Antedated November 26, 1866.)	Dec. 11, 1866.
60,506	Guerrant, J. C., and B. J. Field	Leaksville, N. C	Engraving, machine for	Dec. 18, 1866.
	Guettich, R., and A. Rohms. (*See* Rohms & Guettich.)			
58,407	Guidet, Charles	New York, N. Y	Pavement, Belgian	Oct. 2, 1866.
54,333	Guilbert, Sivé	do	Car brake	May 1, 1866.
	Guild, Joseph	West Roxbury, Mass	Mortising machines (Extension)	Nov. 30, 1866.
52,563	Guild, Spencer	Millford, N. H	Seeder and fertilizer combined	Feb. 13, 1866.
53,816	Guilford, Timothy	Cheshire, Conn	Glass buttons, machines for pressing	Apr. 10, 1866.
	Guillemin, Auguste, und Charles Goty. (*See* Goty & Guillemin.)			
	Guillemin, L., and E. Burgry. (*See* Burgry & Guillemin.)			
53,441	Guilliford, John	Girard, Pa	Rack and store shelf	Mar. 27, 1866.

53,608	Guilmette, C. A., assignor to self and George P. Fowle	Boston, Mass	Photography	Apr. 3, 1866.
54,334	Gullmanex, Christopher	Poughkeepsie, N. Y.	Well curb	May 1, 1866.
56,553	Same	....do	Water elevators for wells	July 24, 1866.
57,895	Same	....do	Carpet fastener	Sept. 11, 1866.
55,854	Gunning, J. F. J., and Isaac T. Meyer	New York, N. Y.	Buckles	June 26, 1866.
56,407	Gunther, G	....do	Musical attachment to bird cages	June 19, 1866.
55,285	Gurley, William	Troy, N. Y.	Fire-engines, water-spreading nozzle for	June 5, 1866.
53,220	Gusman, Louis B., assignor to self and Edwin Steer	Philadelphia, Pa.	Linch pin	Mar. 13, 1866.
60,507	Gustin, Charles M	Saccarappa, Maine	Boots and shoes, jacks for the manufacture of	Dec. 18, 1866.
51,941	Guthrie, James T	Leesburg, Ohio	Carriages, modes of releasing horses from	Jan. 9, 1866.
57,704	Same	....do	Locks. (Antedated August 17, 1866)	Sept. 4, 1866.
57,705	Guthrie, Jones	Wilmington, Del	Bolts, shears for cutting	Sept. 4, 1866.
59,593	Guthrie, Moses	Clifton, Iowa	Beehives	Nov. 13, 1866.
52,993	Guttman, Julius	Somersworth, N. H.	Teeth, artificial	Mar. 16, 1866.
2,411	Same	Great Falls, N. H.	Dentures, artificial (Reissue)	Dec. 4, 1866.
58,723	Guttridge, D. C., assignor to self and William Cluff	Canton, Ohio	Car coupling	Oct. 9, 1866.
57,316	Guttridge, D. C., and W. F. Rogers	....do	Block and tackle check	Aug 21, 1866.
56,211	Guyer, William A	New York, N. Y.	Bedsteads, invalid. (Antedated June 22, 1866)	July 10, 1866.
52,788	Gwynn, Stuart, assignor to Alfred B. Ely	....do	Wood, cloth, paper, &c., with paraffine. Process for saturating	Feb. 20, 1866.
60,178	Gwynne, Alfred	....do	Pipe couplings	Dec. 4, 1866.
59,213	Haak, Henry	Myerstown, Pa	Gauges, grain	Oct. 30, 1866.
59,996	Haberbush, Michael, and Edward Krechel	Lancaster, Pa	Bridles	Nov. 27, 1866.
56,554	Habermehl, John	Wheeling, West Va	Chair	July 24, 1866.
	Hackett, S. H., and E. O. Rood. (*See* Rood & Hackett.)			
55,584	Hadaway, Augustus S., assignor to self and W. S. Hadaway	Plymouth, Mass	Ice creeper	June 12, 1866.
53,817	Hadden, James C	New York, N. Y.	File, letter	Apr. 10, 1866.
54,530	Hadfield, George	Cincinnati, Ohio	Diseases by vacuum, medical apparatus for treating	May 8, 1866.
59,388	Same	....do	Medical vacuum chambers	Nov. 6, 1866.
60,364	Hadley, Aaron S	Boston, Mass	Dish mop	Dec. 11, 1866.
60,179	Haeck, François	Belgium	Wines, method of imparting age to	Dec. 4, 1866.
59,389	Hagan, Peter, assignor to William N. Walton	Elizabeth City, N. J.	Lamp chimneys	Nov. 6, 1866.
57,317	Hagen, Robert	St. Louis, Mo	Box, ice and coal	Aug. 21, 1866.
53,973	Hagenmeyer, Gebhard	Big River, Cal	Grease cups	Apr. 17, 1866.
58,639	Same	....do	Fuse locks, miners'	Oct. 9, 1866.
58,408	Hagerty, D	Baltimore, Md	Solder, tinners', melting and moulding	Oct. 2, 1866.
59,835	Haggert, John	New York, N. Y.	Wagons, &c., axle nuts for	Nov. 20, 1866.
55,088	Hagny, Adam	Keokuk, Iowa	Buckle	May 29, 1866.
55,648	Same	....do	Hook, snap	June 19, 1866.
	Hague, Henry, and John George. (*See* George & Hague.)			
55,286	Haight, Samuel N	Bedford Station, N. Y.	Faucet, self-inserting	June 5, 1866.
	Haight, W. N. (*See* Smith, Isaac, assignor.)			
	Same.			
60,508	Hailes, William, assignor to self and S. H. Ransom	Albany, N. Y.	Kettles, boilers, &c., mode of attaching covers to	Dec. 18, 1866.
58,640	Hain, F. K	Renora, Pa	Axle-box cover	Oct. 9, 1866.
56,042	Haines, Ansel, and John Kirkman	Pekin, Ill; Kickapoo, Ill	Wheels, metal, construction of	July 3, 1866.
56,212	Haines, Joel	Middleburg, Ohio	Cheese cutters	July 10, 1866.
56,931	Same	West Middleburg, Ohio	Case, show	Aug. 17, 1866.
58,248	Same	....do	Fuel dumper	Sept. 25, 1866.
56,213	Haines, Joseph C	Louistown, Pa	Bridles	July 10, 1866.
55,490	Haines, P. S	Newburg, N. Y.	Wool, for picking, carding, &c. Apparatus for treating	June 12, 1866.
51,997	Haines, William H., assignor to self and John McLorinan	Newark, N. J	Cloth, enamelled, manufacture of	Jan. 9, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,998	Haines, William H., assignor to self and John McLorinan	Newark, N. J	Varnish for enamelling cloth	Jan. 9, 1866.
55,649	Hains, L. C	Bedford, Ohio	Cheese vats	June 19, 1866.
53,609	Hainsworth, Frederick	Chicago, Ill	Blowers, rotary	Apr. 3, 1866.
	Haldeman, J. S., and Thomas Moore. (*See* Moore & Haldeman.)			
59,390	Hale, Alonzo	Eureka, Ill	Ploughs, sulky	Nov. 6, 1866.
56,932	Hale, C. H	Fayetteville, N. Y	Washing machine	Aug. 7, 1866.
52,564	Hale, Holman J.	New York, N. Y	Tobacco-smoking device	Feb. 13, 1866.
	Hale, J. F. F., and G. D. Spooner. (*See* Spooner & Hale.)			
53,933	Hale, William	England	Rockets	Apr. 10, 1866.
	Haley, J. B., and G. W. Hewitt. (*See* Hewitt & Haley.)			
	Hall & Specr. (*See* Kincaid, Robert D., assignor.)			
55,089	Hall, Albert	New York, N. Y	Gun, spring, toy	May 29, 1866.
	Hall, A. B., *et. al.* (*See* Bazin, James A., assignor.)			
55,287	Hall, Alexander W	....do	Churns	June 5, 1866.
55,491	Same	....do	Churns	June 12, 1866.
60,363	Same	....do	Churn dasher	Dec. 11, 1866.
57,127	Hall, Charles	....do	Chain cables, machine for adjusting	Aug. 14, 1866.
53,531	Hall, Charles, and Emil Hubner, assignors, through *mesne* assignments, to Charles Hall and J. D. Van Voorhis.	....do	Bolts, machine for making	Mar. 27, 1866.
58,096	Hall, Charles, and Emil Hubner	New York, N. Y	Bolt-heading machines	Sept. 19, 1866.
57,650	Hall, C. F	Toronto, C. W	Wagon, lumber	Aug. 28, 1866.
55,855	Hall, C. H	New York, N. Y	Petroleum and other liquids, distilling	June 26, 1866.
58,813	Hall, C. H., and John Ellis	....do	Distilling apparatus	Oct. 16, 1866.
59,214	Hall, Daniel and Joseph	Wheeling, West Va	Furnace, puddling	Oct. 30, 1866.
58,343	Hall, Daniel B., assignor to self, M. G. Wiley, and C. J. Cobb	Bucksport, Maine	Chair, recumbent	Sept. 25, 1866.
	Hall, David E. (*See* Gessinger, Samuel, assignor.)			
57,706	Hall, E. R	Ilion, N. Y	Rakes, horse	Sept. 4, 1866.
46,408	Hall, Edwin R	Buffalo, N. Y	Coal hods	July 17, 1866.
	Hall, George, *et al.* (*See* Scott, John B., assignor.)			
57,707	Hall, George W	Augusta, Mich	Sower and drill, combined	Sept. 4, 1866.
51,895	Hall, Henry, assignor to self, T. Finley, I. Schlichter, and T. Hall	Lambertsville, N. J	Spinning hemp, flax, &c., drawing rollers for	Jan. 2, 1866.
52,708	Hall, J. F	Westerly, R. I	Vessels, hanging centre-boards of	Feb. 20, 1866.
	Hall, J. M., *et al.* (*See* White, Luther C., assignor.) Reissue.			
58,249	Hall, James M. F	Davenport, Iowa	Medical compound	Sept. 25, 1866.
	Hall, James T., *et al.* (*See* Pierce, John F., assignor.)			
	Hall, James T., *et al.* (*See* Parker, James H., assignor.)			
53,818	Hall, Joel A	Columbus, Ohio	Strippers, cane	Apr. 10, 1866.
58,814	Same	....do	Cultivators, garden	Oct. 16, 1866.
59,215	Same	....do	Cultivators, cotton	Oct. 30, 1866.
55,090	Hall, Lester	Richfield, Ohio	Racks, sheep	May 29, 1866.
55,091	Hall, Manley	....do	Fence, field, portable	May 29, 1866.
	Hall, M., and J. Bardsley. (*See* Whitling, John H., assignor.)			
56,933	Hall, Marshall P	Manchester, N. H	Fasteners, key	Aug. 7, 1866.
53,296	Hall, Nicholas	New Market, Md	Broom head	Mar. 20, 1866.
	Hall, Norman, and Leonard Lakin. (*See* Lakin and Hall.)			

58,545	Hall, Robert L., assignor of one-half interest to Joseph G. Russell.	Lowell, Mass	Bed bottom	Oct. 2, 1866.
60,180	Hall, Samuel C	Whitewater, Wis	Sickle, section, machine for cutting	Dec. 4, 1866.
55,092	Hall, Samuel G., and George W. Bugbee	Norwich, Ct	Engines, steam, rotary. (Antedated May 21, 1866.)	May 29, 1866.
58,097	Hall, Thomas	Bergen, N. J	Lamp burners	Sept. 18, 1866.
59,997	Hall, Thomas, assignor to George B. Buell	....do	Sewing machines	Nov. 27, 1866.
54,335	Hall, William H	New Gloucester, Maine	Horses, elastic cushion and guard for the feet of	May 1, 1866.
	Hall, W. P., and G. Moody. (*See* Moody & Hall.)			
54,336	Hallefas, William J	Brooklyn, N. Y	Engine governors	May 1, 1866.
	Haller, R. H., *et al.* (*See* Runyon, Haller & Morris.)			
57,128	Hallet, Enoch	Hillsdale, Mich	Brick machine	Aug. 14, 1866.
53,373	Hallet, James E., assignor to Edward H. Jones and Charles W. Noyes.	Greenbush, N. Y	Pumps, oscillating	Mar. 20, 1866.
54,145	Halligan, Thomas J	New York, N. Y	Sewing machines, warped thread	Apr. 24, 1866.
59,127	Halligan, Thomas J., assignor to self and Samuel Shapter	....do	Sewing machines, warped thread. (Antedated June 14, 1866.)	Oct. 23, 1866.
	Halliwell, William, *et al.* (*See* Turner, Shore & Halliwell.)			
52,565	Hallowell, Albert, assignor to self and George E. Mitchell	Lowell, Mass	Washing tumblers, apparatus for	Feb. 13, 1866.
58,815	Halsey, John R	Newark, N. J	Boat for travelling on ice	Oct. 16, 1866.
53,920	Halsey, William H., assignor to David N. Ropes	Hoboken, N. J	Rubber, India, hat and cap bands	Apr. 10, 1866.
58,344	Same	... do	Necktics, India-rubber	Sept. 25, 1866.
57,500	Halsey, William H., and Maurice Fitzgibbons	Hoboken, N. J New York, N. Y	Sewing machines	Aug. 28, 1866.
53,921	Halsey, Wm. H., and Maurice Fitzgibbons, assignors to David N. Ropes	Hoboken, N. J New York, N. Y	Rubber, hard, &c., to be used in articles of dress, new articles of, manufacture of.	Apr. 10, 1866.
53,922	Halsey, Wm. H., and Maurice Fitzgibbons, assignors to David N. Ropes	Hoboken, N. J New York, N. Y	Rubber, hard, or gutta percha, for articles of dress, and other uses, method of treating.	Apr. 10, 1866.
57,708	Halsted, William	Trenton, N. J	Fuel, artificial, manufacture of. (Antedated Aug. 10, 1866.)	Sept. 4, 1866.
52,490	Halvorson, Halvor, assignor through mesne assignments to self, William T. Eustis, and Levi L. Cushing, jr.	North Cambridge, Mass	Ores, gold, method of treating	Feb. 6, 1866.
59,594	Hamaker, Abraham G	Eberly's Mills, Pa	Shafts, upright step for	Nov. 13, 1866.
54,144	Hamar, Alexander	New York, N. Y	Wells, artesian, method of boring	Apr. 24, 1866.
	Hamblin, Francis. (*See* Lloyd Aaron, assignor.)			
52,043	Hambujer, Ephraim	....do	Registers, passenger	Jan. 16, 1866.
54,718	Same	Detroit, Mich	Wardrobe, bureau, desk, washstand, and bed, combined	May 15, 1866.
55,972	Same	....do	Corsets	June 26, 1866.
57,709	Same	....do	Chair, folding	Sept. 4, 1866.
55,650	Hamill, Alexander	Baltimore, Md.	Railway chair	June 19, 1866.
2,178	Hamilton, Charles S	Fond-du-Lac, Wis.	Grain to different bins, distributing (Reissue)	Feb. 20, 1866.
58,246	Hamilton, Edward	Chicago, Ill	Amalgamator	Feb. 27, 1866.
56,409	Same	....do	Valves, safety, steam	July 17, 1866.
	Hamilton, E. J., and E. H. Janney. (*See* Janney & Hamilton.)			
53,221	Hamilton, George B., assignor to self and Andrew Noerr	Washington, D. C	Ore washer	Mar. 13, 1866.
53,442	Hamilton, Hugh	Newburg, N. Y	Hammers, steam, valve gear for	Mar. 27, 1866.
	Hamilton, J. B. (*See* Barlow, James C., assignor.)			
58,409	Hamilton, William	Chicopee, Mass	Lubricating apparatus	Oct. 2, 1866.
58,168	Hamlet, Ira W., assignor to self and Henry J. Chapman	Nashua, N. H	Neck ties	Sept. 18, 1866.
53,141	Hamlin, Amos	Schoharie, N. Y	Churns	Mar. 13, 1866.
2,375	Same	....do	Boots and shoes, metallic armor of (Design)	Aug. 7, 1866.
	Hamlin, E., *et al.* (*See* Woods, George, assignor.)			
54,896	Hammer, George	Philadelphia, Pa	Corks, machines for cutting	May 22, 1866.
	Hammer, G. B. (*See* Condon, Charles E., assignor.)			
54,146	Hammer, George H	Newville, Pa	Mop head	Apr. 24, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,953	Hammer, George H., assignor to self, D. J. Brougher, and Wm. A. Middleton.	Newville, Pa	Cans, fruit, fastening for	June 26, 1866.
	Hammer, George H., *et al.* (*See* Middleton, Wm. A., assignor.)			
53,443	Hammond, A	Jacksonville, Ill	Ploughs, gang	Mar. 27, 1866.
54,531	Hammond, A. F	Houston, Ohio	Alarm, burglar	May 8, 1866.
59,216	Hammond, C. L	North Java, N. Y	Medicine for horses	Oct. 30, 1866.
56,043	Hammond, David	Canton, Ohio	Bridges	July 3, 1866.
52,165	Hammond, Henry	Bridgeport, Conn	Cartridge retractor for revolving fire-arms	Jan. 23, 1866.
54,147	Same	do	Shot and cartridge pouches	Apr. 24, 1866.
57,896	Same	Hartford, Conn	Spectacle frames, manufacture of	Sept. 11, 1866.
	Hammond, Henry. (*See* Rodier, Louis C., assignor.)			
55,288	Hammond, Horace P., and William A. Hathaway	North Kingston, R. I	Ladder, step	June 5, 1866.
59,008	Hammond, Joshua F	Providence, R. I	Jack, carriage	Oct. 23, 1866.
57,439	Hammond, Joshua F., assignor to Henry Staples	do	Jacks, lifting	Aug. 21, 1866.
55,093	Hammond, William	Marshall, Mich	Cultivator, wheel, and gang plough	May 29, 1866.
59,009	Handforth, Benjamin	Chicago, Ill	Curtain fixture	Oct. 23, 1866.
56,214	Handschuh, Frederick	Allentown, Pa	Chair and fan, combined	July 10, 1866.
60,181	Handy, Thomas	Decatur, Ill	Metal plates, devices for grinding. (Antedated Nov. 23, 1866)	Dec. 4, 1866.
58,941	Haneison, E., A. Wagner, and A. Nulson, ass'ors to Nulson & Co.	Cincinnati, Ohio	Brick kilns	Oct. 16, 1866.
55,856	Haneline, Martin	Clear Creek, Ind	Broom head	June 26, 1866.
58,098	Hanford, Jesse	Lexington, Mass	Sugar, granulating and drying	Sept. 18, 1866.
52,491	Hankey, John, assignor to self and Henry Muller	North Cambridge, Mass	Curriers' scourer	Feb. 6, 1866.
59,836	Hanks, Stedman W	Lowell, Mass	Pictures to frames, mode of attaching. (Antedated Nov. 11,'66)	Nov. 20, 1866.
60,509	Hanley, James	New York, N. Y	Friction clutch for machinery, spiral	Dec. 18, 1866.
	Hanley, J. A., *et al.* (*See* Briggs, B. G., assignor.) Design.			
	Same.			
	Same.			
52,847	Hanlon, John	Newark, N. J	Sewing machines	Feb. 27, 1866.
	Hanna, James W. (*See* Osgood, James H., jr., assignor.)			
59,998	Hanna, James W., assignor to self and James H. Osgood, jr	Wabash, Ind	Drying lumber, apparatus for	Nov. 27, 1866.
	Hannay, Peter. (*See* Plant, Pascal, assignor.)			
54,719	Hansbrow, Thomas	Sacramento, Cal	Pumps	May 15, 1866.
53,532	Hansen, A. M., assignor to William Higby	Stockton, Cal	Pump valves	Mar. 27, 1866.
57,897	Hanson, A. S	Milan, Mich	Pumps	Sept. 11, 1866.
57,501	Hanson, Freeman	Hollis, Maine	Turntable	Aug. 28, 1866.
54,645	Hanson, J. A., assignor to self, H. S. McElwain, and H. K. Kent	Amsterdam, N. Y	Water wheels	May 8, 1866.
57,502	Hanson, Mark E	Newport, Maine	Gas from petroleum, naphtha, &c., apparatus for generating and burning.	Aug. 28, 1866.
55,289	Hanson, Thomas	New York, N. Y	Motive power, transmitting	June 5, 1866.
53,610	Hanvey, Thomas	Elma, N. Y	Timber for cutting into veneers, preparing	Apr. 3, 1866.
58,816	Happersett, D. Jones	Coatesville, Pa	Car truck	Oct. 16, 1866.
54,532	Harbaugh, Washington H	Piqua, Ohio	Stoves, heating	May 8, 1866.
59,595	Harcourt, J. F	Moscow, Ind	Drill, wheat	Nov. 13, 1866.
60,182	Harcourt, Theodore	Indianapolis, Ind	Skate fastener	Dec. 4, 1866.
60,628	Hard, Edwin	Canal Dover, Ohio	Sawing machines	Dec. 18, 1866.

	Hard, P. C., and Thomas W. Browning. (*See* Browning & Hard.)			
54,148	Harder, Dennis R.	North Chatham, N. Y.	Wells, oil, method of boring	Apr. 24, 1866.
57,503	Harder, William W.	New York, N. Y.	Locks	Aug. 28, 1866.
52,848	Hardgrove, O. J.	Canton, Ohio	Car brake	Feb. 27, 1866.
59,999	Harding, E. B.	Northampton, Mass.	Pessaries	Nov. 27, 1866.
	Harding, George, and John W. Dixon. (*See* Dixon & Harding.)			
	Harding, Thos., and Saml. K. Lighter. (*See* Lighter & Harding.)			
	Harding, William W. (*See* Van Velthoven, Richard, assignor.)			
58,817	Hardison, Freeman M., and John A. Hooper	South Berwick, Maine	Mop head	Oct. 16, 1866.
54,533	Hardwick, Peter W	Wayne county, Ind.	Bedsteads, invalid	May 8, 1866.
52,995	Hardy, Anson, and F. F. and G. A. Walker	Boston, Mass.	Locks. (Antedated February 28, 1866)	Mar. 6, 1866.
57,318	Hardy A. A.	Pittsburg, Pa	Umbrellas	Aug. 21, 1866.
60,365	Hardy, Dexter D., assignor to Thomas H. Foulds	Cincinnati, Ohio	Pumps and engines, rotary	Dec. 11, 1866.
60,366	Hardy, D. D., and J. J. Morris	....do.	Pumps and engines, rotary	Dec. 11, 1866.
55,094	Hardy, George	Lawrence, Mass.	Ventilator, car	May 29, 1866.
56,215	Hardy, P. H.	Terre Haute, Ind.	Washing machine	July 10, 1866.
	Hargrave, Joseph. (*See* Darrow, George P., assignor.)			
	Hargraves, T. C., *et al.* (*See* McLean, Charles, assignor.)			
	Harlan, J., *et al.* (*See* Holliday, James G., assignor.)			
52,566	Harley, George W. T.	Frederick, Md	Measures, tailors'	Feb. 13, 1866.
54,149	Harlow, P.	Kingston, N. Y	Ash sifter	Apr. 24, 1866.
60,000	Harlow, Philander	Hudson, Mass.	Eyeleting machines	Nov. 27, 1866.
54,337	Harper, C. A.	Little Rock, Ark.	Cooking apparatus by lamps, &c., portable	May 1, 1866.
59,766	Same	Rahway, N. J.	Stove, coal oil, or gas heater	Nov. 20, 1866.
2,421	Same	....do.	Lamp cooking apparatus, portable (Reissue)	Dec. 18, 1866.
58,250	Harper, Nathan	Newark, N. J.	Fans	Sept. 25, 1866.
59,744	Harper, Reuben	Philadelphia, Pa	Hoes, manufacture of	Nov. 20, 1866.
52,361	Harper, Robert, assignor to E. C. Harrington	Chelsea, Mass	Railroad turnouts. (Antedated January 17, 1866)	Jan. 30, 1866.
57,319	Harper, Thomas	West Manchester, Pa	Hubs, wagon, machines for boring	Aug. 21, 1866.
55,095	Harrar, John	Philadelphia, Pa	Fastenings, shutter	May 29, 1866.
57,710	Harrier, Henry	Indianapolis, Ind.	Grain binders	Sept. 4, 1866.
56,144	Harrington, Barzilla, assignor to self and J. L. Newton	Boston, Mass	Hides, knife for removing hair from. (Antedated June 22, 1866)	July 3, 1866.
56,216	Harrington, B. S	....do	Beds, spring	July 10, 1866.
	Harrington, E. C. (*See* Harper, Robert, assignor.)			
53,297	Harrington, Jackson, and Francis Caffrey	New Haven, Conn	Propeller wheel	Mar. 20, 1866.
55,657	Harrington, Prescott V.	Attleborough, Mass	Skirt supporters	June 19, 1865.
2,415	Harrington, John R., assignor through mesne assignments to George W. Chipman.	Boston, Mass	Carpet lining (Division A, Reissue)	Dec. 11, 1866.
2,416	Same	....do	Carpet lining, machine for making (Division B, Reissue)	Dec. 11, 1866.
56,934	Harris, B. I.	Harrisburg, Pa.	Jar, fruit	Aug. 7, 1866.
58,251	Same	....do	Stove-pipe damper	Sept. 25, 1866.
60,367	Harris, Benjamin T.	Brooklyn, N. Y	Screw eyes, tools for inserting	Dec. 11, 1866.
2,337	Harris, C., and P. W. Zoiner	Cincinnati, Ohio	Stove, cook's (Design)	June 12, 1866.
2,338	Same	....do	Stove, parlor (Design)	June 12, 1866.
2,339	Same	....do	Stove, coal (Design)	June 12, 1866.
56,555	Harris, Daniel	Canaan, Maine	Hoe, horse	July 24, 1866.
56,556	Harris, E. B.	Wilmington, Ill	Pump, force	July 24, 1866.
52,944	Harris, Edward C.	New York, N. Y.	Wood-bending machine	Feb. 27, 1866.
51,828	Harris, Francis M.	Winnamac, Ind	Evaporator	Jan. 2, 1866.
60,183	Harris, George W.	Elizabeth, N. J.	Gas retorts	Dec. 4, 1866.
	Harris, George W. (*See* Mason, Matthew B., assignor.)			
55,096	Harris, George W., and Andreas Franz	New York, N. Y.	Tools, mode of attaching handles to	May 29, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,709	Harris, H. A. M.	Philadelphia, Pa	Pumps	Feb. 20, 1866.
56,935	Harris, Horace	Newark, N. J	Calendars, perpetual. (Antedated July 25, 1866)	Aug. 7, 1866.
52,410	Harris, J	Green Lake, Wis	Car coupling	Feb. 6, 1866.
52,710	Harris, Jabez H	Point Isabel, Ohio	Signal alarm, railroad	Feb. 20, 1866.
59,010	Harris, James	Kansas, Ill	Ploughs	Oct. 23, 1866.
54,338	Harris, John	Marquette, Wis	Broom head	May 1, 1866.
59,011	Same	do	Broom head	Oct. 23, 1866.
53,819	Harris, John O	Reading, Pa	Lanterns	Apr. 10, 1866.
58,942	Harris, John O., assignor to self and Israel S. Ritter	do	Lanterns	Oct. 16, 1866.
59,717	Same	do	Lanterns	Nov. 13, 1866.
56,044	Harris, Joseph B	Germantown, Ky	Composition of matter for rendering paint fire-proof	July 3, 1866.
	Harris, M. (*See* Diusmore, John V., assignor.)			
56,936	Harris, Samuel and D	Shippensburg, Pa	Hay forks, horse	Aug. 7, 1866.
60,184	Harris, Sandy, assignor to C. Thornton Murphy	Philadelphia, Pa	Weights, balance	Dec. 4, 1866.
54,720	Harris, William B	Springfield, Mass	Collars, paper	May 15, 1866.
54,534	Harrison, A. T	Clinton, Ill	Cultivators	May 8, 1866.
56,410	Harrison, B. J., and J. Condie	New York, N. Y	Chairs, folding	July 17, 1866.
54,535	Harrison, Edward	New Haven, Conn	Mills, grinding	May 8, 1866.
53,974	Harrison, James	Jamestown, N. Y	Pumps, deep well	Apr. 17, 1866.
57,711	Harrison, James	New York, N. Y	Signs, illuminated	Sept. 4, 1866.
56,217	Harrison, James J	St. Michael's, Md	Preserving meat, composition for	July 10, 1866.
59,767	Harrison, Joseph J. and Edward	Manchester, England	Looms, devices for operating the shuttles in	Nov. 20, 1866.
58,252	Harrison, Samuel	Philadelphia, Pa	Grate bar	Sept. 25, 1866.
52,711	Harroun, Alexander, jr	Onondaga, N. Y	Lamps	Feb. 20, 1866.
57,320	Same	do	Broom head	Aug. 21, 1866.
59,837	Harsen, William	Green Point, N. Y	Stuffing boxes	Nov. 20, 1866.
52,567	Harsha, Mortimer S	Sycamore, Ill	Weather strip	Feb. 13, 1866.
	Harshaw, Samuel A. (*See* Turney, G. L., assignor.)			
	Hart, A., *et al.* (*See* Rehfuss, George, assignor.)			
56,747	Hart, C. L	Mattoon, Ill	Stripper and cutter, sorghum	July 31, 1866.
	Hart, Eli S., *et al.* (*See* Parker, H. D., assignor.)			
	Hart, John P. (*See* Orne, Eben T., assignor.)			
57,712	Hart, Philo W	Stamford, N. Y	Looms, power	Sept. 4, 1866.
55,857	Hart, William H.	Medfield, Mass	Butter-worker	June 26, 1866.
54,536	Hart, W. H., jr	Philadelphia, Pa	Neck-ties	May 8, 1866.
57,129	Hart, William H., jr	do	Neck-tie supporters	Aug. 14, 1866.
58,410	Hartell, Thomas R	do	Glass, mode of ornamenting and lettering	Oct. 2, 1866.
59,217	Harter, Andrew	Delphia, Ind	Tallying machines, grain	Oct. 30, 1866.
	Hartford Carpet Co. (*See* Thompson, H. G., assignor.) Design.			
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54,069	Hartford, D. Frank, assignor to self and Edmund Tarbell	Boston, Mass	Drill stocks	Apr. 17, 1866.
	Harthill, Alexander. (*See* Bawsel, J. A., assignor.) Reissue.			
56,937	Harthill, A. B	New York, N. Y	Fishing-line reels	Aug. 7, 1866.
	Hartley, N. D., and W. B. Walker. (*See* Walker & Hartley.)			
56,218	Hartley, Roger	Pittsburg, Pa	Pumps	July 10, 1866.
	Hartley, Thomas, *et al.* (*See* Sweency, Mathews & Hartley.)			
59,390	Hartlieb, John	Reading, Pa	Pavements, &c., composition for	Nov. 6, 1866.
57,504	Hartman, Andrew	Canton, Ohio	Car coupling	Aug. 28, 1866.
58,818	Same	do	Railroad switch	Oct. 16, 1866.
53,938	Hartman, John F	Fond-du-Lac, Wis	Swing	Apr. 10, 1866.
59,596	Hartman, S. B	Millersville, Pa	Bridles	Nov. 13, 1866.
52,712	Hartman, W. H	Fostoria, Ohio	Faucets, molasses	Feb. 20, 1866.
52,568	Hartshorn, Sheldon S	New Haven, Conn	Buckles	Feb. 13, 1866.
52,569	Hartson, George B., and E. J. Woolsey	New York, N. Y	Centrifugal machines	Feb. 13, 1866.
2,302	Same	do	Centrifugal machines (Reissue)	July 10, 1866.
54,150	Hartupee, Andrew	Pittsburg, Pa	Engines, steam	Apr. 24, 1866.
	Hartzell, J. S., and C. R. Roberts. (*See* Roberts & Hartzell.)			
	Harvey & Ford. (*See* Britner, George C., assignor.) Design.			
54,537	Harvey, Charles T	Tarrytown, N. Y	Cars on railways, mode of propelling. (Antedated April 6, 1866)	May 8, 1866.
56,411	Same	do	Railroads	July 17, 1866.
53,444	Harvey, Charles W	Buffalo, N. Y	Ores, gold, silver, and copper, refractory process of reducing	Mar. 27, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Harvey, Edward. (*See* Webster, John T., assignor.) Design.			
54,538	Harvey, E. A	Wilmington, Del	Acid on sheet-iron, method of utilizing	May 8, 1866.
2,505	Harvey, Joseph, assignor to Harvey & Ford	Philadelphia, Pa	Tobacco-pipe (Design)	Nov. 13, 1866.
59,597	Harvey, William	Portland, Maine	Composition for printers' inking rollers	Nov. 13, 1866.
54,897	Harwood, Asaph L	Malone, N. Y	Broom clasp	May 22, 1866.
	Harwood, George S., *et al.* (*See* Savage, Elliott, assignor.)			
	Same.			
	Same.			
	Harwood, George S., and George H. Quincey. (*See* Clissold, William, assignor.) Reissue.			
	Hascall, William S. (*See* Overmann, H. J., assignor.)			
57,898	Hasecoster, George	Richmond, Ind	Looms for weaving slatted window shades	Sept. 11, 1866.
58,099	Hasecoster, George, and I. Stephens	do	Heaters, feed water	Sept. 18, 1866.
53,142	Haserick, E. C	Lake Village, N. H	Iron chips, turnings, &c., mode of melting and aggregating	Mar. 3, 1866.
2,250	Same	do	Iron chips, turnings, &c., mode of melting and aggregating. (Reissue.)	May 22, 1866.
	Haskell, D. C. and C. H. (*See* Thompson, Henry, assignor.)			
	Same.			
59,598	Haskett, R., and W. B. Cox	West Milton, Ohio	Sugar, centrifugal machines for draining	Nov. 13, 1866.
53,820	Haskins, David G	Cambridge, Mass	Heating apparatus, gas	Apr. 10, 1866.
55,652	Same	do	Stove, gas, for heating	June 19, 1866.
56,748	Same	do	Steam generators	July 31, 1866.
60,001	Haskins, J. P	Saratoga Springs, N. Y	Gas of mineral springs, method of exhibiting the	Nov. 27, 1866.
60,510	Hassenpflug, Henry	Huntington, Pa	Sawing machines	Dec. 18, 1866.
	Hastings, A. M., *et al.* (*See* Baker, Haydn M, assignor.)			
	Hastings, A. M., *et al.* (*See* Jones & Farquharson, assignors.)			
	Hastings, A. M., and Alexander McVean. (*See* Baker, Haydn M., assignor.)			
52,849	Hastings, George	Waltham, Mass	Watch hands	Feb. 27, 1866.
54,539	Same	do	Watch dies	May 8, 1866.
54,898	Same	do	Watches, dies for swaging hands for	May 22, 1866.
55,099	Same	do	Watch hands, blocks for polishing and glossing	May 29, 1866.
	Hastings, R. Edgar. (*See* Robbins, Thomas C., assignor.)			
	Hastings, William, *et al.* (*See* Holliday, James G., assignor.)			
60,368	Haswell, W. J	Waverly, N. Y	Bed bottom	Dec. 11, 1866.
55,653	Hatch, Anson	New Haven, Conn	Fishing reels	June 19, 1866.
53,374	Hatch, Anson, assignor to self and John P. Lindsay	do	Lathes	Mar. 20, 1866.
	Hatch, Edward. (*See* Beach, Albert N., assignor.)			
60,511	Hatch, Frank	La Crosse, Wis	Brush and box, blacking, combined	Dec. 18, 1866.
60,185	Hatch, G. W	Parkman, Ohio	Flax, &c., machine for gathering and loading	Dec. 4, 1866.
2,321	Hatch, Jesse W., and Henry Churchill	Rochester, N. Y	Boot and shoe soles, machine for cutting (Reissue)	July 24, 1866.
60,369	Hatch, Jonathan, assignor to self, C. Smith, and H. Winchester	South Windham, Conn	Packing revolving joints	Dec. 11, 1866.
56,045	Hatfield, R. Francis	New York, N. Y	Engines, steam, valves, &c	July 3, 1866.
	Hatfield, R. G., and W. H. Butler. (*See* Butler & Hatfield.)			
57,130	Hathaway, M. P	Mankato, Maine	Harvesters, cutting apparatus for	Aug. 14, 1866.

60,186	Hathaway, R	Chicopee, Mass	Gauges, surface and depth	Dec. 4, 1866.
58,253	Hathaway, Thomas S	Decatur, Ill	Match safe	Sept. 25, 1866.
	Hathaway, William A., and Horace P. Hammond. (*See* Hammond & Hathaway.)			
58,411	Hathorn, S. R	Castleton, Vt	Buildings, snow and ice guards for roofs of	Oct. 2, 1866.
54,540	Hauck, Charles J	Williamsburg, N. Y	Oilers	May 8, 1866.
2,504	Same	do	Oil can (Design)	Nov. 13, 1866.
	Haupt, H. (*See* Smith, John Y., assignor.)			
	Same.			
52,570	Havell, George	Newark, N. J	Bolts	Feb. 13, 1866.
52,290	Same	do	Bag, carpet frame	June 5, 1866.
59,745	Haven, James L., and Charles Hettrick	Cincinnati, Ohio	Bandelore	Nov. 20, 1866.
52,287	Haven, Jonathan H	Lewiston, N. Y	Motive power	Jan. 30, 1866.
57,505	Havens, Joseph S., T. M. Johnson, and C. W. Howe	Buffalo, N. Y	Supporters, uterine and abdominal	Aug. 28, 1866.
54,339	Havens, Robert T	Wilmington, Ohio	Boots and shoes, process for preparing wood for. (Antedated April 16, 1866.)	May 1, 1866.
	Hawes, W. E., *et al.* (*See* Spofford & Hersey, assignors.)			
	Hawes, William M. (*See* Eddy, Nelson P., assignor.)			
55,858	Hawkes, Gilbert	Lynn, Mass	Boots and shoes, manufacture of	June 26, 1866.
58,819	Hawkes, Nathan	Appleton, Maine	Cultivator and ditcher, combined	Oct. 16, 1866.
56,046	Hawkins, Hiram A	Virden, Ill	Weather strip	July 3, 1866.
54,151	Hawkins, Horace R	Akron, Ohio	Rakes, horse	Apr. 24, 1866.
	Hawkins, Lorenzo D., and Cyrus W. Baldwin. (*See* Baldwin & Hawkins.)			
53,143	Hawkins, Moses	Derby, Conn	Shaft coupling	Mar. 13, 1866.
58,345	Hawkins, Moses, assignor to self, R. M. and T. S. Bassett	do	Shaft coupling	Sept. 25, 1866.
56,219	Hawkins, Thomas	Auburn, N. Y	Bee-hives	July 10, 1866.
55,417	Hawkins, William H., assignor to self and James D. Orne	Rochester, N. Y	Sewing machines, spool thread regulator for. (Antedated May 30, 1866.)	June 5, 1866.
51,942	Hawks, Joel P	Troy, N. Y	Curriers' knife	Jan. 9, 1866.
60,370	Hawks, Thomas	Rochester, N. Y	Malt, condensed extract of	Dec. 11, 1866.
54,340	Hawley, B. R	Normal, Ill	Evaporator	May 1, 1866.
56,412	Hawley, C. P., and E. B. Murdock	East Galway, N. Y	Gates	July 17, 1866.
	Hawley, Horace H., *et al.* (*See* Cary, Ebenezer, assignor.)			
	Hawley, H. Q., *et al.* (*See* McDonald, Donald, assignor.)			
54,541	Hawley, J. B	New Haven, Conn	Knife and tool rack	May 8, 1866.
52,411	Hawley, Louis J	Baltimore, Md	Lightning rods	Feb. 6, 1866.
	Hawley, Samuel F., *et al.* (*See* Denton, Charles, assignor.)			
	Same.			
52,118	Haworth, John	England	Horses, brushing for cleaning	Jan. 16, 1866.
	Haworth, John. (*See* Gordon, W. J., assignor.)			
52,994	Haxstun, Andrew K	Fort Edward, N. Y	Paper pulp from straw, manufacture of	Mar. 6, 1866.
59,768	Hay, A. T	Burlington, Iowa	Boilers, steam, preventing the incrustation of	Nov. 20, 1866.
59,910	Same	do	Sugar or other boilers, preventing incrustation of	Nov. 27, 1866.
55,796	Haycock, Samuel H	Ottawa, C. W	Projectiles	June 19, 1866.
2,530	Hayden, Henry H., assignor to Holmes, Booth & Hayden	New York, N. Y	Knife handle (Design)	Dec. 18, 1866.
2,171	Hayden, Hiram W	Waterbury, Conn	Kettles, machines for making (Reissue)	Feb. 13, 1866.
56,939	Same	do	Fire-arms, magazine. (Antedated August 3, 1866)	Aug. 7, 1866.
53,611	Hayden, James	Philadelphia, Pa	Mills, hominy	Apr. 3, 1866.
56,557	Hayden, James	Exeter, Wis	Feed box, ration	July 24, 1866.
53,612	Hayes, George E	Buffalo, N. Y	Dentists' use, vulcanizing vessels for	Apr. 3, 1866.
55,029	Hayes, James	England	Sewing machines	May 22, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Hayes, James, and Joseph Bradt. (*See* Bradt & Hayes.)			
	Hayes, John L., and John H. Elwood. (*See* Elwood & Hayes.)			
59,392	Hayes, Lewis S	Greene, N. Y	Sawing machines	Nov. 6, 1866.
60,512	Hayes, Thomas	Cambridge, Mass	Filters	Dec. 18, 1866.
	Hayward, Charles H. (*See* Cutler, Alexander, assignor.)			
2,207	Hayward, Francis D., and Ira E. Sanborn, assignee of John C. Bickford	Malden, Mass. Boston, Mass	Rubber, India, cloth, process for rolling (Reissue)	Mar. 20, 1866.
2,262	Same	do	Rubber, India, cloth, process for rolling (Division A., reissue)	June 5, 1866.
2,263	Same	do	Rubber, India, process for rolling (Division B., reissue)	June 5, 1866.
	Hayward, F. D., and J. R. Moffitt. (*See* Moffitt & Hayward.)			
	Hayward, George L. (*See* Fairchild, J. H., assignor.)			
60,371	Hayward, Henry M	Boston, Mass	Saw-horses, or bucks	Dec. 11, 1866.
51,943	Hayward, Horace, assignor to self and Thomas H. Dodge	Fitchburg, Mass	Boots, balmoral cut ing uppers for	Jan. 9, 1866.
51,944	Same	do	Boots, balmoral	Jan 9, 1866.
58,412	Hayward, Jerrah	Greene, N. Y	Rakes, hay, horse	Oct. 2, 1866.
58,641	Hayward, J. Henry	New York, N. Y	Skirts, paper, for ladies	Oct. 9, 1866.
56,220	Hazard, F	Mauch Chunk, Pa	Wire rope, machinery for weaving	July 10, 1866.
58,820	Hazard, J. S	Newport, R. I	Bottles, instrument for removing wires from	Oct. 16, 1866.
54,899	Hazard, Thomas	Wilmington, Ohio	Fodder cutter	May 22, 1866.
55,219	Hazeltine, Ezra T	Warren, Pa	Lamp-chimney cleaner	June 5, 1866.
59,599	Hazleton, George H	Philadelphia, Pa	Metal, sheet, coated	Nov. 13, 1866.
	Same (*See* Manigle, Edward M., assignor.)			
53,975	Hazen, G. W. L	Franklin, Ind	Evaporator	April 17, 1866.
	Hazleton, J. C., and G. H. Mellen. (*See* Mellen & Hazleton.)			
	Hazlewood, Greenville, and William Rhodes. (*See* Rhodes & Hazlewood.)			
	Head, John W., and Nelson. (*See* Forsyth, John W., assignor.)			
59,218	Headington, Nicholas	Cincinnati, Ohio	Railroad chair	Oct. 30, 1866.
	Headley, William O. (*See* Fruhmsfeld, Louis, assignor.)			
57,321	Heald, Edward	Washington, D. C	Cisterns, float valves for	Aug. 21, 1866.
54,900	Heald, Issachar A	Carlisle, Mass	Cigars, machine for making	May 22, 1866.
57,713	Healy, B. S	Cohocton, N. Y	Gates	Sept. 4, 1866.
60,372	Healy, Nathan M	Flushing, Mich	Stump extractors	Dec. 11, 1866.
55,098	Heany, A. W	Doylestown, Pa	Hay, machine, for raking and loading	May 29, 1866.
	Heap, Robert, and Charles H. Southall. (*See* Southall & Heap.)			
58,413	Heath, Edward	Fowlerville, N. Y	Ditching machine	Oct. 2, 1866.
54,542	Heath, Laban	Boston, Mass	Optical instruments. (Antedated May 1, 1866)	May 8, 1866.
55,099	Heath, Luman F	Lansing, Mich	Sawing machines	May 29, 1866.
59,600	Heath, William	Bath, Me	Bedsteads, invalid	Nov. 13, 1866.
53,247	Heaton, Charles	New York, N. Y	Fibres, process for disentegrating	Mar. 13, 1866.
53,248	Same	do	Fibres, process for disentegrating	Mar. 13, 1866.
53,298	Same	do	Evaporating alkaline solutions, process for	Mar. 20, 1866.
56,221	Heaton, C. W. S	Belleville, Ill	Pantaloon protectors	July 10, 1866.
	Heaton, Edward. (*See* Morris, Eli, jr., assignor.)			

	Heavenridge, Samuel, and Thomas H. Miner. (*See* Miner & Heavenridge.)			
52,996	Hebard, Lewis, and William S. Brown	Lexington, Cal	Bullets, machine for moulding	Mar. 6, 1866.
53,222	Hebard, Albert, assignor to self and John P. Onderdonk	Buffalo, N. Y	Car springs	Mar. 13, 1866.
2,531	Hebard, Henry	New York, N. Y	Spoon handles (Design)	Dec. 18, 1866.
	Hedden, R., *et. al.* (*See* Wheeler, S. H., assignor.)			
60,187	Heddenburg, John W	Chicago, Ill	Cotton ties	Dec. 4, 1866.
	Hedges, Joseph, and Ralph A. Jones. (*See* Jones & Hedges.)			
57,899	Heelan, Lawrence W	Petersburg, Ill	Hame tug and buckle	Sept. 11, 1866.
57,322	Heermance, Garet G	Claverack, N. Y	Wells, construction of	Aug. 21, 1866.
60,513	Heflebower, S., and J. M. Reed	Alexandria, Va. / Loudon county, Va.	Separators, grain	Dec. 18, 1866.
55,100	Hegarty, John	Jersey City, N. J	Wrenches, screw	May 29, 1866.
59,601	Heiderich, B	Brady's Bend, Pa	Car trucks	Nov. 13, 1866.
56,222	Heidler, George L	York, Pa	Rakes, horse	July 10, 1866.
54,721	Heileg, Daniel	Chicago, Ill	Stove, cooking	May 15, 1866.
58,642	Hein, George M	Brownsville, Ind	Washing machine	Oct. 9, 1866.
58,414	Heineman, H. M	Williamsburg, N. Y	Neckties, fastenings for	Oct. 2, 1866.
54,901	Heisay, John L	Elizabethtown, Pa	Planters, corn and seed	May 22, 1866.
59,602	Heinz, Peter C	Funkville, Pa	Injectors	Nov. 13, 1866.
59,911	Heiss, George	Lancaster, Pa	Cigar presses	Nov. 20, 1866.
59,219	Heisterman, Christian	Brownsville, Pa	Boots and shoes, machine for wrinkling the instep of	Oct. 30, 1866.
	Heller, J., *et. al.* (*See* Baumgarten, Moritz, assignor.)			
	Same.			
	Helm, Woodhull, and Francis W. Crosby. (*See* Crosby & Helm.)			
59,393	Helme, Isaac	Philadelphia, Pa	Burner, hydro-carbon, for stills, engines, &c	Nov. 6, 1866.
52,997	Helms, Charles H	Poughkeepsie, N. Y	Heel breasting machine	Mar. 6, 1866.
56,938	Same	do	Leather chamfering machine	Aug. 7, 1866.
	Hemenway, Henry. (*See* Buzzell, John P., assignor.)			
57,453	Hempsted, Lorenzo, and Lesher S. Hill	Hartford, Conn	Cars, railroad, safety bridge for	Aug. 21, 1866.
59,838	Henckel, F., and William Seck	Bavaria	Hulling grain machine	Nov. 20, 1866.
60,629	Henderson, A. A	Norfolk county, Va	Engines, steam governors	Dec. 18, 1866.
54,902	Henderson, A. R., and James Ford	Andover, N. Y	Bed bottom	May 22, 1866.
	Henderson, C. M. (*See* Hollingsworth, James, assignor.)			
60,002	Henderson, William	Scotland	Iron, wrought, and steel, direct from the ore, manufacture of	Nov. 27, 1866.
60,514	Same	do	Ores of copper and other metals to obtain metals and other products therefrom, treating.	Dec. 18, 1866.
54,341	Henderson, William H	Franklin, Ind	Tools, forming, tinman's. (Antedated April 16, 1866)	May 1, 1866.
54,342	Same	do	Tools, edging, tinman's. (Antedated April 16, 1866)	May 1, 1866.
53,613	Henderson, William M	Philadelphia, Pa	Engines, steam	April 3, 1866.
56,558	Hendley, John W	Washington, D. C	Bellows, sand	July 24, 1866.
56,559	Hendrick, P. M., and John J. Chattaway	Springfield, Mass	Gun swab	July 24, 1866.
52,850	Hendy, Joshua	San Francisco, Cal	Gold and silver washing apparatus	Feb. 27, 1866.
53,976	Same	do	Concentrator	April 17, 1866.
53,977	Same	do	Saw mills	April 17, 1866.
56,223	Heneage, Robert	Buffalo, N. Y	Hose couplings	July 10, 1866.
58,254	Same	do	Dryer, grain	Sept. 25, 1866.
56,672	Heneage, Robert, assignor to self and J. D. Shepard	do	Mills, smut	July 24, 1866.
60,003	Henis, Charles F	Cincinnati, Ohio	Coal scuttle	Nov. 27, 1866.
54,722	Henke, Frederick	Scranton, Pa	Steam-gauge cocks	May 15, 1866.
54,152	Henkel, George H	Middletown, Ohio	Car brake	April 24, 1866.
	Hennessey, T. J. (*See* Connor, John C., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,654	Henry, Alexander	North Britain	Fire-arms, breech-loading	Feb. 13, 1866.
	Henry, George, and M. V. Miller. (*See* Miller & Henry.)			
60,188	Henry, Granville	Nazareth, Pa	Fire-arms, fitting lock-plate to stock of	Dec. 4, 1866.
58,415	Henry, Joshua	Steubenville, Ohio	Churns	Oct. 2, 1866.
57,633	Hensey, Henry, assignor to self and Louis Sulter	Carver, Minn	Boat, life	Aug. 28, 1866.
54,903	Henshaw Foster	Washington, D. C	Springs, window sash	May 22, 1866.
2,166	Henshaw, J. R., assignor through mesne assignments to the Middletown Tool Company	Middletown, Conn	Hook, self-mousing (Reissue)	Feb. 6, 1866.
53,614	Henshaw, William	Spencer, Mass	Hay and straw cutters	April 3, 1866.
55,292	Henszey, Samuel C., jr	West Chester, Pa	Troche, bronchial	June 5, 1866.
52,998	Henton, Isaiah	Shelbyville, Ill	Cultivators	Mar. 6, 1866.
53,144	Heptinstall, M. C	Enfield, N. C	Alarm, burglar	Mar. 13, 1866.
53,821	Hepworth, S. S	Boston, Mass	Vices, smith's	April 10, 1866.
	Herbert, Albin, and Philip Rentlinger. (*See* Rentlinger & Herbert.)			
52,412	Herbert, Charles G	New York, N. Y	Stool, camp	Feb. 6, 1866.
57,506	Herbert, Henry	Cincinnati, Ohio	Tongs, pipe	Aug. 28, 1866.
56,047	Herdlein, Alexander	Egan Cannon, Nevada	Quartz stamp mills	July 3, 1866.
57,900	Herget, John	St. Louis, Mo	Beer, &c., cooler for	Sept. 11, 1866.
59,012	Herman, J. B	Mt. Vernon, Iowa	Cultivator	Oct. 23, 1866.
52,713	Hermance, William G	Albany, N. Y	Gates, farm	Feb. 20, 1866.
54,543	Hermann, August	New Haven, Conn	Mangle or rolling press	May 8, 1866.
58,416	Same	....do	Vessels' holds, apparatus for discharging bilge-water from	Oct. 2, 1866.
	Herr, Christian G. (*See* Frailey, Henry L., assignor.)			
53,923	Herr, Daniel K., assignor to Theodore W. Herr	Locust Valley, Pa	Stencil brush	April 10, 1866.
59,013	Herr, John B	W. Lampeter township, Pa.	Cultivators	Oct. 23, 1866.
57,323	Herrick, George	Nashville, Tenn	Car, wrecking	Aug. 21, 1866.
52,166	Herrick, John I	Horicon, Wis	Washing machine	Jan. 23, 1866.
	Hersey, C. H., and Charles Spofford. (*See* Spofford & Hersey.)			
58,643	Hersey, George W	Greenbush, Wis	Tanning, process for	Oct, 9, 1866.
59,769	Herthel, George P., jr	St. Louis, Mo	Bridges, truss	Nov. 20, 1866.
	Herthel, George P. jr., and Philip L. Fox. (*See* Fox & Herthel.)			
56,155	Herzog, Moritz, and D. L. Cohn	Austria, England	Burner, hydro-carbon	July 3, 1866.
52,851	Hess, Benjamin	Manor Township, Pa	Harvesters	Feb. 27, 1866.
56,413	Hess, Charles	Cincinnati, Ohio	Piano, couch, and bureau combined	July 17, 1866.
	Hess, Charles, and James Canfield. (*See* Canfield & Hess.)			
	Heston, Alonzo, and Alexander T. Evory. (*See* Evory & Heston.)			
	Hettrick, Charles, and James L. Haven. (*See* Haven & Hettrick.)			
59,220	Hess, John D., and Isaiah	Union, Ohio	Stripper, sorghum. (Antedated September 28, 1866)	Oct. 30, 1866.
	Heuser, L., and E. A. Locke. (*See* Loeke & Heuser.)			
57,901	Heuston, Adolph	San Francisco, Cal	Paddle wheel	Sept. 11, 1866.
54,153	Hewes, Joseph L	Newark, N. J	Valves, cut off	April 24, 1866.
51,945	Hewes, S. E	Albany, N. Y	Well tube packing	Jan. 9, 1866.
59,221	Same	....do	Steam and air ejectors	Oct. 30, 1866.

	Hewett, S. B., jr., *et. al.* (*See* Bradley, Jeremy, assignor.)			
54,343	Hewitt, Silas	Seneca Falls, N. Y.	Churns	May 1, 1866.
54,154	Hewitt, Charles	Trenton, N. J	Iron plates, wrought, corrugated, for railroad wheels, machine for forming.	April 24, 1866.
	Hewitt, D. W., and Asa S. Blinn. (*See* Blinn & Hewitt.)			
54,544	Hewitt, G. W., and J. B. Haley	Cincinnati, Ohio	Low-water detectors	May 8, 1866.
	Hewitt, Robert O., and Nicholas L. Davis. (*See* Davis & Hewitt.)			
54,904	Hey, Michael	Philadelphia, Pa.	Casks, beer, bung for	May 22, 1866.
59,014	Heyden, A. V.	Milwaukee, Wis.	Carriage tops, shifting	Oct. 23, 1866.
53,822	Heyl, John A	Boston, Mass	Railroad switches for street cars	April 10, 1866.
58,943	Heyl, John A., assignor to self and George H. Bailey	do	Electric gas stop cocks	Oct. 16, 1866.
53,299	Heyl, Lewis	Philadelphia, Pa.	Portfolio	Mar. 20, 1866.
57,133	Heyser, John H.	Hagerstown, Md	Windmills	Aug. 14, 1866.
51,829	Heywood, C. L.	Boston, Mass	Plough, snow, railway	Jan. 2, 1866.
53,823	Heywood, Simeon	Claremont, N. H.	Shingle machines	April 10, 1866.
56,048	Heywood, William F.	Cumberland, R. I.	Cloth, machine for folding	July 3, 1866.
57,902	Hibbard, Charles	Chicago, Ill	Knife, dirk, spring	Sept. 11, 1866.
54,344	Hibler, Benjamin H.	Newport, Ky	Skate	May 1, 1866.
58,417	Hickcox, Thomas N.	Brooklyn, N. Y.	Bottles, mucilage, cap for	Oct. 2, 1866.
2,418	Hickel, Sanford A., assignor to self, C. J. and B. F. Armstrong	Roane county, Va.	Tanning (Reissue.)	Dec. 11, 1866.
	Hickerson, F. G. (*See* Belcher, William, assignor.)			
58,821	Hickey, Michael	Boston, Mass	Casks and barrels	Oct. 16, 1866.
54,155	Hickman, G. G	Coatesville, Pa	Carriage wheels	April 24, 1866.
57,132	Hickman, Gibbons G	do	Bolts, washers for	Aug. 14, 1866.
52,714	Hickok, D. H.	Rockford, Ill	Bolts, shears for cutting	Feb. 20, 1866.
54,156	Hickok, D. K.	Morrisville, Vt	Journal box	April 24, 1866.
53,300	Hicks, James M	New York, N. Y.	Steam generators	Mar. 20, 1866.
60,004	Hicks, Joseph H., assignor through mesne assignments to Ignatius Riec.	Brooklyn, N. Y.	Combs	Nov. 27, 1866.
55,101	Hicks, Milan	Richmond, Ill	Stove-pipe damper	May 29, 1866.
60,373	Hicks, Samuel	Orangeville, Ind.	Water wheels	Dec. 11, 1866.
54,906	Hicks, William C	New York, N. Y.	Engines, steam	May 22, 1866.
60,005	Hicks, W. H., and F. Welker	St. Louis, Mo	Cistern leaders, cut-off for	Nov. 27, 1866.
54,345	Hickson, John, and Lyman L. Wilkinson	Auburn, N. Y.	Disinfecting and preserving, composition for	May 1, 1866.
	Hidelberger, L., *et. al.* (*See* Smith, John W., assignor.)			
	Higby, William. (*See* Hansen, A. M., assignor.)			
52,247	Higgins, Francis H., assignor to self and Alfred Thomson	Bordentown, N. J	Screw-cutting chuck	Jan. 23, 1866.
59,523	Higgins, James	Great Britain	Spinning machines, ring and traveller, rings for	Nov. 6, 1866.
60,630	Higgins, James	East Cambridge, Mass	Time indicators, solar	Dec. 18, 1866.
54,723	Higgins, S. R	Parma, Mich	Hay loaders	May 15, 1866.
54,157	Higham, Abram D	Jersey City, N. J	Petroleum, distilling	Apr. 24, 1866.
55,102	Higley, Aaron	South Bend, Ind	Jack, lifting	May 29, 1866.
57,133	Same	do	Car brake, railroad	Aug. 14, 1866.
60,515	Higley, A	do	Car brake	Dec. 18, 1866.
57,714	Higley, Marshall D., and Dana L. Columbia	Morrison, Ill	Reapers, raking and binding attachment to	Sept. 4, 1866.
	Hilbright, F. L., and F. Reynold. (*See* Reynold & Hilbright.)			
56,749	Hilburn, Milton H.	Wilmington, Ill	Harvesters, sickle heads for	July 31, 1866.
53,978	Hildebrand, Allen	Dubuque, Iowa	Washing machine	Apr. 17, 1866.
59,015	Hildebrand, Lewis F	Chicago, Ill	Tobacco, machine for cutting	Oct. 23, 1866.
	Hildebrand, H., and A. Schriek. (*See* Schrick & Hildebrand.) Same.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,293	Hildreth, George W	Lockport, N. Y	Desk and seat, school	June 5, 1866.
53,445	Hildreth, Paul	Beloit, Wis	Cultivators	Mar. 27, 1866.
58,822	Hildreth, S. P	Mount Vernon, Ohio	Stove, lamp, for dentists	Oct 16, 1866.
59,394	Hill, Albert	New York, N. Y	Watches, regulators for	Nov. 6, 1866.
60,006	Hill, Alexander	Dubuque, Iowa	Tanning	Nov. 27, 1866.
57,715	Hill, Asa	North Providence, R. I	Railway crossings, guards for	Sept. 4, 1866.
60,007	Same	Norwalk, Conn	Marble, process for ornamenting. (Antedated Nov. 14, 1866)	Nov. 27, 1866.
2,434	Hill, B. B	Springfield, Mass	Stamp, canceling (Design)	Sept. 25, 1866.
59,395	Same	do	Stamps, hand	Nov. 6, 1866.
54,346	Hill, Edwin H., assignor to self, L. W. Pond, H. C. Wilson, W. H. Butterfield, and William Bunce.	Worcester, Mass	Pipes, steam, water, or other	May 1, 1866.
60,189	Hill, Frank A	Marysville, Cal	Seeding machines	Dec. 4, 1866.
57,634	Hill, George J., and Stephen Greene, assignors to S. Greene and H. L. Leisenning.	Philadelphia, Pa	Printing presses	Aug. 28, 1866.
59,313	Hill, George W., assignor to self and C. A. Moore	Deep River, Conn	Bat, spring	Oct. 30, 1866.
	Hill, H. R., and O. W. Kellogg. (*See* Kellogg & Hill.)			
54,724	Hill, Joseph J	Xenia, Ohio	Harvester, potato	May 15, 1866.
	Hill, J. W. (*See* Randle, J. M., assignor.)			
	Hill, Nathan, and Emmett Coon. (*See* Coon & Hill.)			
2,149	Hill, S., and William I. Wood, assignors through mesne assignments to Martin R. Cook.	Jersey City, N. J	Gas-holders (Reissue)	Jan. 23, 1866.
53,615	Hill, Sylvester B	Chicopee, Mass	Bosom, paper, machines	Apr. 3, 1866.
59,603	Hill, S. L	Williamsburg, N. Y	Alphabet blocks	Nov. 13, 1866.
52,413	Hill, Thomas M	Eaton, Ohio	Planters, corn	Feb. 6, 1866.
60,008	Hill, Thomas M., and S. D. Tuttle	do	Stalks, corn, machine for cutting and raking	Nov. 27, 1866.
54,158	Hill, Warren F	Portland, Maine	Supporter and fastener, sash	Apr. 3, 1866.
53,533	Hill, Warren S., assignor to C. S. Baker	Manchester, N. H	Bedsteads, invalid	Mar. 27, 1866.
53,824	Hillegass, George	Philadelphia, Pa	Lamp burners	Apr. 10, 1866.
54,159	Same	do	Wagon tires, device for tightening	Apr. 24, 1866.
54,347	Same	do	Faucets, filtering	May 1, 1866.
53,616	Hillis, W. D	Elgin, Ill	Fences	Apr. 3, 1866.
	Hills, Alfred K. (*See* Rogers, Edward F., assignor.)			
52,288	Hills, Charles W., and O. F. Woodruff	Morrison, Ill	Bag-holder	Jan. 30, 1866.
57,134	Hills, Jacob	Heydenville, Mass	Faucet basin	Aug. 14, 1866.
2,349	Hills, J. C	Willoughby, Ohio	Churn bodies, construction of (Reissue)	Sept. 4, 1866.
	Hills, Lester S., and Lorenzo Hempstead. (*See* Hempstead & Hills.)			
52,999	Hills, William O	Nottingham, N. H	Alarm, burglar	Mar. 6, 1866.
	Hilton, Samuel K. (*See* Martin, John R., assignor.)			
	Hilton, T. (*See* Briggs, B. G., assignor.) Design.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			

2,435	Himrod, George, and Charles G. Moulton, assignors to George Himrod.	Chicago, Ill	Stove plates (Design)	Sept. 25, 1866.
2,436	Same	do	Stove plates (Design)	Sept. 25, 1866.
55,654	Hinchley, Eleazer and David	Worcester, Mass	Mowing machines	June 19, 1866.
	Hinchman, C. C., and Chas. P. Frazer. (*See* Frazer & Hinchman.)			
	Hinkley, D. B. (*See* Reynolds, George B., assignor.) Reissue.			
53,547	Hind, Henry Youle	New Brunswick	Peat, apparatus for preparing	Mar. 27, 1866.
59,222	Hindermeyer, A. J	Rohrerstown, Pa	Welding and brazing	Oct. 30, 1866.
60,516	Hindermeyer, Anthony J	do	Iron and steel, flux for welding, puddling, and brazing	Dec. 18, 1866.
56,049	Hindbaugh, William	New York, N. Y	Rockets, safety	July 3, 1866.
59,604	Hindman, J	Olathe, Kansas	Washing machine	Nov. 13, 1866.
59,016	Hinds, Warner	Worcester, Mass	Horseshoes	Oct. 23, 1866.
59,017	Hingbet, Constantine	New Brunswick, N. J	Tobacco pipes, stem for	Oct. 23, 1866.
55,655	Hinkley, Aaron A	Boston, Mass	Refrigerator	June 19, 1866.
57,324	Hinkley, Benjamin	Troy, N. Y	Roofing composition	Aug. 21, 1866.
55,103	Hinkley, Jonas	Norwalk, Ohio	Knitting machines	May 29, 1866.
59,108	Hinman, N. D	Stepney Depot, Conn	Elevator and conveyer, hay	Oct. 23, 1866.
55,104	Hinman, William W., and William W. Neville	Jacksonville, Ill	Car coupling	May 29, 1866.
	Hinsdale, C. C., and R. N. Allen. (*See* Allen & Hinsdale.)			
57,716	Hinton, Spencer, assignor to Withington, Cooley & Co	Jackson, Mich	Lathes, turning, for turning scythe snaths	Sept. 4, 1866.
	Hipple, Frank J. (*See* Price, John P., assignor.)			
54,725	Hires, Charles	Salem, N. J	Grates	May 15, 1866.
	Hirner, Jacob, *et al.* (*See* Anton, Gustav, assignor.)			
58,824	Hirsh, Adolph H	New York, N. Y	Sugar from corn, manufacture of	Oct. 16, 1866.
53,145	Hirzel, John George	Wilmington, Del	Drilling machines	Mar. 13, 1866.
57,507	Hise, Henry	Ottawa, Ill	Buckle, tug. (Antedated August 17, 1866)	Aug. 28, 1866.
	Hise, Henry, and George Mann, jr. (*See* Mann & Hise.)			
52,805	Hisert, B. F	Norton Hill, N. Y	Hay forks, horse	Feb. 20, 1866.
	Hisert, B. F., and G. W. Gregory. (*See* Jarrett, T. T., assignor.) Disclaimer.			
56,750	Hiss, Emil	Delaware, Ohio	Brush, paint	July 31, 1866.
54,545	Hitchcock, Abner	Wayne county, Mich	Bed bottom	May 8, 1866.
	Hitchcock, Alfred C. (*See* Sampson, Elanthan, assignor.) Same.			
	Hitchcock, E. M., *et al.* (*See* Eggleston, John C., assignor.)			
55,859	Hitchcock, John G	New York, N. Y	Neck-tie fasteners	June 26, 1866.
54,726	Hitchings, John A	Denver City, Col. Ter	Metals from ores, machinery for separating	May 15, 1866.
58,100	Same	do	Ores, desulphurizing	Sept. 18, 1866.
56,414	Hoagland, I. W	New Brunswick, N. J	Pumps, deep well, pistons for	July 17, 1866.
55,656	Hoar, John S	West Acton, Mass	Vice, bench	June 19, 1866.
58,101	Hoard, Charles B	Watertown, N. Y	Spinning machines	Sept. 18, 1866.
59,839	Hoard, Isaac L	Bristol, R. I	Lampwick	Nov. 20, 1866.
54,646	Hoard, John W., ass'or to self, S. W. Young, and R. A. Dennison	do	Eyelet stocks	May 8, 1866.
	Hoard, J. W., and G. B. Wiggin. (*See* Wiggin, Jas. S., assignor.)			
59,605	Hochholzer, Hugo, and Frank Denver	Virginia City, Nevada	Tenoning timber, machines for	Nov. 13, 1866.
	Hochholzer, Hugo, *et al.* (*See* Berry, Hochholzer & Denver.)			
59,128	Hoddick, Frederick, assignor to George A. Prince & Co	Buffalo, N. Y	Melodeons	Oct. 23, 1866.
	Hodenpyl, A. J. G., *et al.* (*See* Jahne, Henry, assignor.)			
57,440	Hodges, Charles M., assignor to self, W. O. Capron, and N. Whitmore.	Mansfield, Mass	Scythes	Aug. 21, 1866.
53,985	Hodges, James	England	Peat machine	Apr. 10, 1866.
2,172	Hodges, J. Wilson, assignor to self and P. De Murguiendo	Baltimore, Md	Horseshoe (Reissue)	Feb. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,854	Hodgins, S., assignor to self and Stephen Blackie	St. Louis, Mo	Collars, paper, fastenings for	July 31, 1866.
51,830	Hodgskin, James B	New York, N. Y	Floor cloths, manufacture of	Jan. 2, 1866.
59,019	Hodgson, Harrison	....do	Hat protectors	Oct. 23, 1866.
52,571	Hodgson, Henry	Fremont, Ohio	Bee-hives	Feb. 13, 1866.
56,751	Hodgson, Joseph F	Washington, D. C	Roofing	July 31, 1866.
57,717	Hodson, Isaac N	Mount Pleasant, Iowa	Looms	Sept. 4, 1866.
	Hoe, R. & Co. (*See* Kirk, James, assignor.)			
	Same. (*See* De Puy, Alexander T., assignor.)			
59,020	Hoelzel, Philip	New Orleans, La	Steam generators	Oct. 23, 1866.
58,823	Hoeppner, Arnold	St. Louis, Mo	Vinegar, apparatus for making	Oct. 16, 1866.
	Hoff, Fontaine & Abbott. (*See* Fontaine, John B., assignor.)			
	Hoff, George W. (*See* Terry, T. W., assignor.)			
60,631	Hoff, Leopold	New York, N. Y	Malt extract	Dec. 18, 1866.
56,497	Hoffacker, Bertrand J., assignor to self and August W. Steinhaus	....do	Lamps	July 17, 1866.
	Hoffer, Jacob R. (*See* Minich, Jacob K., assignor.)			
2,224	Hoffheins, Reuben	Dover, Pa	Harvesters (Reissue)	Apr. 10, 1866.
54,160	Hoffheins, Samuel	Hamilton township, Pa	Cultivators	Apr. 24, 1866.
58,825	Hoffman, Amelia B	Roxbury, Mass	Pan, dust	Oct. 16, 1866.
60,009	Same	....do	Crumb remover	Nov. 27, 1866.
55,860	Hoffman, Austin D	Detroit, Mich	Nets, fly, machine for cutting	June 26, 1866.
54,161	Hoffman, Ferdinand	West Cambridge, Mass	Wood, machines for polishing	Apr. 24, 1866.
52,044	Hoffman, Frank	....do	Wood, machines for polishing	Jan. 16, 1866.
54,907	Hoffman, Fred, and Robert Wendler	Brooklyn, N. Y	Disinfecting composition	May 22 1866.
	Hoffman, J. M., and G. P. Garretson. (*See* Garretson & Hoffman.)			
54,162	Hoffman, Lewis G	Albany, N. Y	Locks	Apr. 24, 1866.
56,940	Hoffman, Charles E	Jersey City, N. J	Scales	Aug. 7, 1866.
2,532	Hoffman, Charles E	Philadelphia, Pa	Balance (Design)	Dec. 18, 1866.
	Hoffman, C. P., and M. Brand. (*See* Brand & Hoffman.)			
	Hoffman, Erdmann, and Hermann Mund. (*See* Mund & Hoffman.)			
59,606	Hoffman, Frederick W	Morrisania, N. Y	Cigars, machine for cutting off	Nov. 13, 1866.
58,255	Hoffman, Theodore A	Beardstown, Pa	Respirators	Sept. 25, 1866.
57,135	Hoffstadt, L	Philadelphia, Pa	Dentists, vulcanizing flask for	Aug. 14, 1866.
55,105	Hogan, J. H	St. Louis, Mo	Nail extractors	May 29, 1866.
53,979	Hogan, Peter	Albany, N. Y	Gas, apparatus for carburetting	Apr. 17, 1866.
2,248	Hoge, John, and Robert D. Schultz	Zanesville, Ohio	Trade mark (Design)	Jan. 30, 1866.
57,718	Hoit, David	Fort Wayne, Ind	Boring machine, wood	Sept. 4, 1866.
52,167	Hoit, L. B	Cedar Falls, Iowa	Reaping and mowing machines	Jan. 23, 1866.
54,351	Same	... do	Straw cutter	May 1, 1866.
	Hoit, Lora B., and Oscar F. Burton. (*See* Burton & Hoit.)			
59,223	Holbrook, Philip K	Malden, Mass	Ink cup	Oct. 30, 1866.
55,657	Holcomb, Lyman J	Nunda, Ill	Planters, potato	June 19, 1866.
53,079	Holdcraft, James, assignor to self and William Holderaft	Philadelphia, Pa	Boilers, steam, gauge-cocks for	Mar. 6, 1866.
57,136	Holden, Cyrus B	Worcester, Mass	Punch	Aug. 14, 1866.
59,396	Holden, E. G	Covington, Ky	Preserving fruits and vegetables	Nov. 6, 1866.

53,146	Holden, Hoban J	Genoa, N. Y	Timepicces	Mar. 13, 1866.
57,137	Holden, James	Philadelphia, Pa	Coal scuttle	Aug. 14, 1866.
53,000	Holden, Joseph	Blair county, Pa	Knitting machines, rotary	Mar. 6, 1866.
	Holden, Joseph, and John Rotherham. (*See* Rotherham & Holden.)			
	Holden, L., S. B., and L. L. (*See* Parker, James, assignor.)			
	Hohlenshade, Jacob W. (*See* Votteler, Frederick, assignor.)			
56,560	Holeton, R. S	Niles, Ohio	Water wheels	July 24, 1866.
58,724	Holford, E. R., assignor to self, A. Kingsley, and Clark Alvord	Westford, Wis	Planters, corn	Oct. 9, 1866.
60,374	Holford, James A	Guionsville, Ind	Saw mills	Dec. 11, 1866.
59,718	Holland, Charles W., assignor to self and H. L. Taylor	Fredonia, N. Y	Carriage curtains, knob hole for	Nov. 13, 1866.
55,106	Holland, E. G	Union Springs, N. Y	Beverage	May 29, 1866.
58,256	Holland, Goodrich	Willimantic, Conn	Silk, &c., machine for stretching	Sept. 25, 1866.
	Holland, L. B. (*See* Wright, Robert D., assignor.)			
60,517	Holland, William H	Chelsea, Mass	Paddle wheel	Dec. 18, 1866.
60,518	Same	....do	Paddle wheel	Dec. 18, 1866.
	Holland, Wil iam H. (*See* Goodwin, William, assignor.)			
	Holland, William H. (*See* Collins, M. H., assignor.)			
55,770	Holland, William H., assignor to self and William Goodman	Boston, Mass	Paddle wheel	June 19, 1866.
	Holland, William H., and Michael H. Collins. (*See* Collins & Holland.)			
2,225	Hollen, Joseph, assignor through mesne assignments to John Nesmith.	Blair county, Pa	Knitting machines (Reissue)	Apr. 10, 1866.
	Holliday, Charles R. (*See* Quick, John A., assignor.)			
57,903	Holliday, James G	Wheeling, W. Va	Flask, moulders'	Sept. 11, 1866.
58,169	Holliday, James G., assignor to self, William Hastings, J. Harlan, and R. A. McCabe.	Watertown, N. Y	Roofing composition	Sept. 18, 1866.
57,719	Hollinger, Jacob	Millersburg, Ohio	Cultivators	Sept. 4, 1866.
	Hollingsworth, James. (*See* Crow, Charles, assignor.)			
52,492	Hollingsworth, James, assignor to C. M. Henderson	Chicago, Ill	Locks, sash	Feb. 6, 1866.
	Hollister, G. H., *et al.* (*See* Lyons, James B., assignor.) Same.			
58,826	Hollingsworth, John W	Seymour, Ind	Traps, animal	Oct. 16, 1866.
57,720	Holloway, E. F., and J. W. Hudelson	Knightstown, Ind	Bed bottom	Sept. 4, 1866.
	Hollowell, Joseph E., and Josiah M. Leeds. (*See* Leeds & Hollowell.)			
53,617	Holly, Birdsill	Lockport, N. Y	Steam generators	Apr. 3, 1866.
54,905	Same	....do	Pumps, air compressing	May 22, 1866.
58,827	Holly, George W	Low Moor, Ind	Doors, method of hanging	Oct. 23, 1866.
58,102	Holly, Henry W	Topsham, Maine	Pencil holder	Sept. 18, 1866.
57,138	Holly, Solomon T	Rockford, Ill	Grain binders	Aug. 14, 1866.
57,904	Same	....do	Grain binders	Sept. 11, 1866.
	Holly, William, and William D. Fisher. (*See* Fisher & Holly.)			
51,896	Holman, Calvin J., assignor to Sparrow M. Nickerson	Oshkosh, Wis	Sawing staves	Jan. 2, 1866.
53,446	Holman, Charles	Cameron, Ill	Cultivators	Mar. 27, 1866.
52,168	Holman, Chester C	Clayville, N. Y	Harvesters	Jan. 23, 1866.
59,719	Holmes, A. J., assignor to Wells L. Robbins	Saratoga Springs, N. Y	Picture frames	Nov. 13, 1866.
	Holmes, Booth & Hayden. (*See* Hayden, Henry H., ass'r.) Design.			
58,644	Holmes, Daniel M	Brooklyn, N. Y	Crackers, cream, manufacture of	Oct. 9, 1866.
55,861	Holmes, Elijah	Lynn, Mass	Tobacco, machine for fine-cutting	June 26, 1866.
	Holmes, E. A. (*See* Briggs, John, assignor.)			
	Holmes, G. F., *et al.* (*See* Barker, Holmes & King.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,045	Holmes, George W	Bridgewater, Mass	Windlasses	Jan. 16, 1866.
57,905	Holmes, Ira	South New Berlin, N. Y	Pole and post puller	Sept. 11, 1866.
57,721	Holmes, Noah P	Indianapolis, Ind	Milk, apparatus for preserving	Sept. 4, 1866.
60,190	Same	do	Milk, apparatus for preserving	Dec. 4, 1866.
52,046	Holmquist, Niles R	Sweden	Wood, composition for filling	Jan. 16, 1866.
	Holt, A. W., and John L. White. (*See* Pond, John N., assignor.)			
54,250	Holt, G. L., assignor to self and J. M. Thompson, 2d	Springfield, Mass	Oil cans	Apr. 24, 1866.
52,169	Holt, Horace	Brooklyn, N. Y	Marking wheel	Jan. 23, 1866.
55,294	Holt, James G	Chicago, Ill	Castings, method of making moulds for	June 5, 1866.
55,295	Same	do	Axle skein moulds, machine for preparing	June 5, 1866.
55,296	Same	do	Hub boxes, mode of preparing moulds for	June 5, 1866.
59,840	Same	do	Axle skeins and hub boxes, making sand cores for	Nov. 20, 1866.
	Holt, L. H. (*See* Hurlburt, Benjamin, assignor.)			
54,546	Holtz, Charles	do	Chair and walker for children	May 8, 1866.
58,418	Same	do	Car coupling	Oct. 2, 1866.
53,825	Holtzscheiter, Leonhard	Philadelphia, Pa	Wheel, polishing. (Antedated March 25, 1866)	Apr. 10, 1866.
54,163	Homan, Andrew J	Yonkers, N. Y	Valves, slide	Apr. 24, 1866.
55,297	Homan, S. J	Walden, N. Y	Mills, cider	June 5, 1866.
58,827	Homes, N	Laona, N. Y	Saws, attaching handles to	Oct. 16, 1866.
51,831	Hood, Cornelius	Seneca Falls, N. Y	Pumps, adjustable packings for	Jan. 2, 1866.
54,352	Hood, Harrison P	Lowell, Mass	Vice, bench	May 1, 1866.
53,618	Hook, Albert H	New York, N. Y	Stave machines	Apr. 3, 1866.
56,415	Hook, A. H., and H. B. Adams	do	Erasers	July 17, 1866.
58,257	Hooker, Chauncey M	Hartford, Conn	Dentists' tooth plugger. (Antedated May 1, 1866)	Sept. 25, 1866.
2,343	Hooker, William D	San Francisco, Cal	Pumps (Reissue)	Aug. 28, 1866.
54,353	Hoole, Edmund	New York, N. Y	Alarm, burglar	May 1, 1866.
	Hooper, Daniel, and William G. Smith. (*See* Smith & Hooper.)			
52,289	Hooper, James E	Baltimore, Md	Cotton, machines for cleaning	Jan. 30, 1866.
	Hooper, John A., and Freeman M. Hardison. (*See* Hardison & Hooper.)			
53,826	Hooper, Nicholas B	Newark, N. J	Hat-pressing machines	Apr. 10, 1866.
	Hoopes, B., and C. Borie. (*See* Miller & Carver, assignors.)			
57,906	Hoover, Henry	Hemlo, Ill	Cultivators	Sept. 11, 1866.
59,224	Hoover, Reuben	Boonsborough, Iowa	Washing machine	Oct. 30, 1866.
55,492	Hope, Charles	Springfield, Mass	Desk, revolving	June 12, 1866.
52,047	Hopkins, E. E	Philadelphia, Pa	Water coolers	Jan. 16, 1866.
	Hopkins, E. L., and Norman Olin. (*See* Olin & Hopkins.)			
57,508	Hopkins, E. R	New York, N. Y	Locks	Aug. 28, 1866.
60,010	Same	do	Skirts, hoop, machines for making	Nov. 27, 1866.
	Hopkins, G. E., and F. Bearse. (*See* Bearse & Hopkins.)			
51,999	Hopkins, George M., assignor to self and W. R. Smith	Albion, N. Y	Music, apparatus for turning the leaves of	Jan. 9, 1866.
57,509	Hopkins, George W. and Elisha	Brooklyn, N. Y	Valves, steam, automatic	Aug. 28, 1866.
54,354	Hopkins, James	Madison, Wis	Supporter and fastener, sash	May 1, 1866.
54,547	Hopkins, James A	Oxford, N. Y	Saw set	May 8, 1866.
54,348	Hopkins, J. M	New York, N. Y	Bolt fastenings	May 1, 1866.

54,350	Same	....do	Bolts, flush	May 1, 1866.
	Hopkins, Samuel S., and Charles A. Converse. (*See* Converse & Hopkins.)			
51,832	Hopper, George F	....do	Floor cloths, manufacture of	June 2, 1866.
	Hopson, O. L., and H. P. Brooks. (*See* Manville, Eli J., assignor.)			
52,493	Hopson, Orrin L., Eli J. Manville, and Heman P. Brooks, assignors to Orrin L. Hopson and Heman P. Brooks.	Waterbury, Conn..... Walcottville, Conn.....	Wires, machine for reducing or pointing	Feb. 6, 1866.
58,725	Hopson, O. L., and H. P. Brooks, assignors to the Turner and Clark Manufacturing Company.	Waterbury, Conn..... Walcottville, Conn.....	Buckles	Oct. 9, 1866.
55,862	Horn, Benjamin F	Boston, Mass	Lamp cleaner	June 26, 1866.
60,191	Horn, Edwin B	....do	Safes	Dec. 4, 1866.
56,416	Horne, W. L	Batavia, Ill	Water power device, steam	July 17, 1866.
56,417	Same	....do	Fire escape	July 17, 1866.
54,908	Horner, Joseph, and Silas Van Doren	New Brunswick, N. J	Shade, window, fixture	May 22, 1866.
55,440	Hornsby, Richard	England	Reaping machines	June 5, 1866.
57,820	Horrall, W. A., assignor to self and McCullis Gray	Washington, Ind	Whiffletree	Sept. 4, 1866.
59,314	Horrall, W. A., assignor to self and Richard Bruner	....do	Planter, cotton seed	Oct. 30, 1866.
	Horter, Washington, and Hubbil B. Hutchins. (*See* Hutchins & Horter.)			
57,510	Horton, Henry B	Ithaca, N. Y	Clocks, calendar	Aug. 28, 1866.
57,511	Same	....do	Clock cases	Aug. 28, 1866.
2,229	Horton, James M., assignor through mesne assignments to himself	Albany, N. Y	Augers to their handles, attaching (Reissue)	Apr. 17, 1866.
57,907	Horton, Stephen D	Peekskill, N. Y	Founders' cleansing mill	Sept. 11, 1866.
53,301	Horton, William H	Jersey City, N. J	Chimney cap	Mar. 20, 1866.
55,298	Hosford, William W	New Britain, Conn	Fastenings, sash	June 5, 1866.
2,515	Hoskin, Robert, assignor to Edward C. Sampson	Brooklyn, N. Y	Floor oil-cloth (Design)	Dec. 4, 1866.
	Hoskins, W. H. (*See* Schroeder, F. W., assignor.)			
55,493	Hotchkiss, Bennet	New Haven, Conn	Screw taps, construction of	June 12, 1866.
	Hotchkiss, Bennet. (*See* Goodsell, Samuel C., assignor.)			
2,389	Hotchkiss, Bennet, assignor through mesne assignments to himself	....do	Hammers, trip (Reissue)	Nov. 6, 1866.
58,346	Hotchkiss, Bennet, and Henry Shattuck, assignors to Bennet Hotchkiss	....do Hamden, Conn	Furnaces, forge	Sept. 25, 1866.
56,561	Hotchkiss, Horace	Plainfield, N. J	Metal tubes, machines for making	July 24, 1866.
53,223	Hotchkiss, James, assignor to self and Ezra Buss	Springfield, Ohio	Brick machine	Mar. 13, 1866.
53,980	Hotchkiss, James, and Ezra Buss	....do	Brick machine	Apr. 17, 1866.
	Hotchkiss, Julius. (*See* Parker, Edward, assignor.)			
54,727	Hotchkiss, M. D	Sheboygan Falls, Wis	Clothes dryer	May 15, 1866.
57,908	Hotine, William	Brooklyn, N, Y	Loaves or crackers, machine for moulding and shaping dough into	Sept. 11, 1866.
	Hough, David L., *et al.* (*See* Chapman, William B., assignor.)			
56,562	Hough, T. L	Philadelphia, Pa	Trusses	July 24, 1866.
57,722	Same	....do	Trusses	Sept. 4, 1866.
	Houghtelin, J. W., and Cortland Ball. (*See* Ball and Houghtelin.)			
54,548	Houghton, Frank H	Brooklyn, N. Y	Liquids, apparatus for measuring	May 8, 1866.
55,495	Houghton, Stillman	Worcester, Mass	Skirt, hoop, wire	June 12, 1866.
52,414	House, James A. and Henry A	Bridgeport, Conn	Trunks, elastic shields for	Feb. 6, 1866.
53,618	Same	....do	Button-hole cutters	Apr. 3, 1866.
55,863	Same	....do	Sewing machines, button-hole	June 26, 1866.
55,864	Same	....do	Sewing machines, button-hole	June 26, 1866.
55,865	Same	....do	Sewing machines, button-hole	June 26, 1866.
55,866	Same	....do	Sewing machine clamp	June 26, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,224	House, James A. and Henry A	Bridgeport, Conn	Sewing machines, Wheeler & Wilson, rotating hook of	July 10, 1866.
53,224	House, J. A. and H. A., assignors to Bridgeport Knitting Company	....do	Knitting machines	Mar. 13, 1866.
	House, Mark W., and John M. Perkins. (*See* Perkins and House.)			
60,375	Housman, Michael and Simeon	Huntington, Ind	Corn sheller	Dec. 11, 1866.
54,349	Houston, David	New York, N. Y	Grate bar	May 1, 1866.
54,164	Hover, Lewis	Chicago, Ill	Iron, sad, holder	Apr. 24, 1866.
56,498	Hovey, Francis, assignor to self and Chas. H. Clayton	New York, N. Y	Stamp-cancelling press	July 17, 1866.
51,833	Hovey, Samuel D	Chicago, Ill	Fuel, artificial	Jan. 2, 1866.
52,852	Hovey, William H	Springfield, Mass	Brick machine. (Antedated February 16, 1866.)	Feb. 27, 1866.
	Howard, Azel. (*See* Shipman, George, assignor.)			
54,728	Howard, Charles	New York, N. Y	Bayonet attachment	May 15, 1866.
58,419	Howard, Charles W	Philadelphia, Pa	Clothes-line clamp	Oct. 2, 1866.
2,370	Howard, Edward	Boston, Mass	Watch plate (Design)	July 24, 1866.
58,829	Howard, Eli H., and Alfred J. Manchester	Providence, R. I	Sponge cup	Oct. 16, 1866.
57,325	Howard, Frank A	Belfast, Maine	Mitering machine	Aug. 21, 1866.
55,658	Howard, George C	Philadelphia, Pa	Pressing and moulding pliable materials, machine for	June 19, 1866.
58,258	Howard, Henry	Springfield, Mass	Radiator, steam	Sept. 25, 1866.
59,147	Howard, James, and Edward F. Bonsfield	England	Steam generators	Oct. 23, 1866.
59,021	Howard, Jno. S	Schenectady, N. Y	Car truck	Oct. 23, 1866.
59,022	Howard, R. C	Lena, Ill	Ploughs, corn	Oct. 23, 1866.
52,252	Howard, Robert L., and John Danglish, assignors to Steuben T. Bacon	England	Bread aerator, apparatus for making	Jan. 23, 1866.
53,981	Howard, Thomas M	Charlestown, Pa	Drilling machine	Apr. 17, 1866.
58,546	Howard, William T., assignor to self and Isaac McK. Chase	Baltimore, Md	Cock, gauge, boiler	Oct. 2, 1866.
54,549	Howarth, David	Portland, Maine	Buttons	May 8, 1866.
58,817	Howarth, David, assignor to self, W. R. Johnson, and S. C. Rundlett.	....do	Pail, dinner	May 15, 1866.
55,771	Howarth, David, assignor to self, W. N. Gourley, and S. C. Rundlett	... do	Lamps	June 19, 1866.
	Howarth, Hezekiah, and Job Johnson. (*See* Johnson and Howarth.)			
52,170	Howarth, James	Monroeville, Ohio	Carriage thills, coupling for	Jan. 23, 1866.
52,715	Howarth, William S	New Haven, Conn	Tool for cutting gas pipes, &c	Feb. 20, 1866.
52,853	Howe, Benjamin J. C	Syracuse, N. Y	Wells, mode of sinking	Feb. 27, 1866.
	Howe, C. W., *et al.* (*See* Havens, Johnson & Howe.)			
54,729	Howe, Eldridge	Marlborough, Mass	Tethering-halter apparatus. (Antedated April 15, 1866.)	May 15, 1866.
	Howe, Elias, jr. (*See* McCurdy, James S., assignor.)			
53,147	Howe, George A	Brooklyn, N. Y	Cotton pickers	Mar. 13, 1866.
53,447	Same	....do	Cotton pickers	Mar. 27, 1866.
60,376	Howe, Grey D	Lewisport, Ky	Press, baling	Dec. 11, 1866.
57,326	Howe, H. B., and W. J. Mackrell	New York, N. Y	Braiding machines, stop-motion for	Aug. 21, 1866.
	Howe, John, jr. (*See* Strong and Ross, assignors.)			
59,607	Howe, Jno. M	Franklin, N. H	Lamps, extinguisher for	Nov. 13, 1866.
55,867	Howe, M. V. B	Ashburnham, Mass	Knife and scissors sharpener	June 26, 1866.
53,620	Howe, Tyler	Cambridgeport, Mass	Bedstead, folding	Apr. 3, 1866.

54,730	Howell, DeWitt C	Goshen, N. Y	Steam generators	May 15, 1866.
52,171	Howell, D. H	Independence, Iowa	Planters, corn, hand	Jan. 23, 1866.
54,165	Howell, James P	New York, N. Y	Tire shrinkers	Apr. 24, 1866.
	Howell, William C., *et al.* (*See* Richardson, Davis, and Howell.)			
58,103	Howland, George L	Topsham, Maine	Hoisting apparatus	Sept. 18, 1866.
54,909	Hoxsie, David K., and Thomas L. Reed	Providence, R. I	Tubing, flexible, manufacture of	May 22, 1866.
53,621	Hoyt, Edwin	Stamford, Conn	Water elevators	Apr. 3, 1866.
56,050	Same	....do	Churns	July 3, 1866.
56,752	Same	....do	Tobacco pipe	July 31, 1866.
52,290	Hoyt, Ezra P	New York, N. Y	Teeth, artificial	Jan. 30, 1866.
58,421	Hoyt, H. A	Mott Haven, N. Y	Stamp moistener	Oct. 2, 1866.
58,726	Hoyt, Jerome, assignor to self, Edwin Hoyt, and Lafayette Farrington.	Stamford, Conn	Sawing machines	Oct. 9, 1866.
55,107	Hoyt, L. S., and E. G	Croton Falls, N. Y	Wrench, screw, and hammer	May 29, 1866.
	Hubbard, Amos T. (*See* Chase, Albert D., assignor.)			
56,753	Hubbard, Francis M	Ripon, Wis	Carriages, spring seats for	July 31, 1866.
	Hubbard, G. W. *et al.* (*See* Smith, Scott A., assignor.)			
2,359	Hubbard, G. W., and Wm. E. Conant	Brooklyn, N. Y / Little Falls, N. Y	Engines, direct action, operating slide-valves in (Reissue)	Sept. 18, 1866.
55,868	Hubbard, N. W	Fulton City, Ill	Trusses	June 26, 1866.
52,415	Hubbard, Wm. W	Philadelphia, Pa	Bolt-screwing and nut-tapping machine	Feb. 6, 1866.
58,104	Same	....do	Nuts, machine for making	Sept. 18, 1866.
54,166	Hubbard, Wm. W	Edinburg, Ind	Planters, corn	Apr. 24, 1866.
	Hubbe, Martin, and Chas. Kinkel. (*See* Kinkel and Hubbe.)			
57,512	Hubbell. Horace	New Haven, Conn	Hydraulic engines	Aug. 28, 1866.
58,259	Hubbell, J. L., and E. Sherman	Fairfield, Conn	Elevator, hay	Sept. 25, 1866.
52,048	Hubbell, L. B	Alton, Ill	Threshing machines, gearing for	Jan. 16, 1866.
	Hubbell, P. (*See* Blake, George F., assignor.) Reissue.			
53,827	Hubbell, Saunders, jr	Urbana, Ohio	Drawers, money, catch for	Apr. 10, 1866.
	Huber, H. (*See* Beebe, James, assignor.)			
	Hubner, Emil, and Charles Hall. (*See* Hall and Hubner.) Same.			
57,139	Huckaus, Thomas	New Baltimore, N. Y	Tobacco and matches, box for	Aug. 14, 1866.
	Hudelson, J. W., and E. F. Holloway. (*See* Holloway and Hudelson.)			
	Hudson, G. S., and A. J. Smith. (*See* Smith and Hudson.)			
56,754	Hudson, Jno. M	New York, N. Y	Vessels, construction and rigging for, trestle-trees for	July 31, 1866.
52,172	Hudson, Sidney	Milford, Mich	Ladder, fruit	Jan. 23, 1866.
53,622	Hudson, Thomas S	East Cambridge, Mass	Pens	Apr. 3, 1866.
55,299	Same	....do	Type, printing, construction and manufacture of	June 5, 1866.
55,300	Same	....do	Printing wheels, &c., construction of	June 5, 1866.
59,225	Same	....do	Canceling apparatus	Oct. 30, 1866.
51,834	Hudson, Wm., jr., and Augustus L	Hingham, Mass	Photographic sensitizing box	Jan. 2, 1866.
56,563	Huestis, D	Cold Spring, N. Y	Pavement	July 24, 1866.
60,011	Hufendick, H. and E. Spraugenberg	St. Louis, Mo	Bungs	Nov. 28, 1866.
55,869	Huffman, Samuel	Carthage township, Ill	Patterns, puncturing machine for making	June 26, 1866.
52,716	Hughes, Daniel	Rochester, N. Y	Quartz crushing	Feb. 20, 1866.
55,870	Hughes, Hiram	Sarona, N. Y	Car coupling	June 26, 1866.
55,301	Hughes, Robert	Dangerfield, Texas	Engines, rotary	June 5, 1866.
	Hughes, Stephen, and Jacob Roop. (*See* Graezzle, G., assignor.)			
	Hughes, T. S., and S. D. Richardson. (*See* Richardson and Hughes.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,855	Hughes, Wm., assignor to self and Jno. Fieldstad	Waupun, Wis	Boat, life	July 31, 1866.
57,723	Hughes, W. H., and H. L. Lint	Peekskill, N. Y	Stand and mirror	Sept. 4, 1866.
59,735	Hugo, Wilhelm	Hanover	Umbrellas	Nov. 13, 1866.
53,001	Hugunin, Robert B	Cleveland, Ohio	Clothes wringers, rollers and fastenings for	Mar. 6, 1866.
53,002	Same	do	Bottle stoppers, caster wheels, syringe pistons, &c., manufacture of	Mar. 6, 1866.
56,418	Same	New York, N. Y	Clothes wringers, washers, &c., rollers for	July 17, 1866.
58,645	Huie, Charles	Lockport, N. Y	Horseshoes, punch for	Oct. 9, 1866.
	Huckill, Jackson. (*See* Moore, Thomas, assignor.)			
53,302	Hulbert, P. F	Chatham, N. Y	Step block for carriages	Mar. 20, 1866.
55,302	Same	do	Clamp	June 5, 1866.
54,356	Hull, Bradley	Westport, Conn	Irons, hatter's, dies for	May 1, 1866.
54,355	Hull, Duane	Newburg, N. Y	Kaolin, &c., apparatus for washing	May 1, 1866.
58,547	Hull, Jno., and William P. Anderson, assignors to selves and Henry J. Hull.	Hackettstown, N. J	Horse-power brakes	Oct. 2, 1866.
56,051	Hull, Jno. S	Cincinnati, Ohio	Lamps, soldering, and blow-pipes	July 3, 1866.
56,052	Same	do	Heater, gas, for cooking, &c	July 3, 1866.
58,260	Same	do	Cooking and heating apparatus, petroleum	Sept. 25, 1866.
58,261	Same	do	Lamps, vapor, burners for	Sept. 25, 1866.
52,718	Hull, Liveras	Charlestown, Mass	Weaving coverings for whip handles, machine for	Feb. 20, 1866.
53,003	Same	do	Lathes, turning, for wood	Mar. 6, 1866.
54,167	Same	do	Webbing, elastic	Apr. 24, 1866.
56,419	Same	do	Lathes, for turning whip stocks	July 17, 1866.
58,830	Same	do	Braiding machines	Oct. 16, 1866.
53,303	Hullinger, M. H	Greenville, Ill	Cultivators	Mar. 20, 1866.
54,550	Hulse, James V	Acra, N. Y	Medical compound	May 8, 1866.
60,519	Hulskamp, G. H	New York, N. Y	Piano-fortes	Dec. 18, 1866.
	Hume, S. (*See* Woodward, Stephen W., assignor.)			
2,190	Humiston, Willis	Troy, N. Y	Candles, apparatus for moulding (Reissue)	Mar. 6, 1866.
58,724	Hummer, Herbert A	Franklin township, N. J	Ploughs	Sept. 4, 1866.
53,148	Humphrey, Fenton	Philadelphia, Pa	Roaster, coffee	Mar. 13, 1866.
	Humphrey, W. H., and J. Marchbank. (*See* Marchbank and Humphrey.)			
56,053	Humphreys, D	Oskaloosa, Iowa	Planters, corn, hand	July 3, 1866.
2,376	Hunermund, Henry	New York, N. Y	Stand, work basket	Aug. 14, 1866.
52,854	Hungerford, E. B	Elmira, N. Y	Window blinds	Feb. 27, 1866.
58,831	Hungerford, Henry	New York, N. Y	Carpet stretcher	Oct. 16, 1866.
	Hunneman & Co. (*See* Jucket, Edward B., assignor.) Same.			
60,377	Hunt, A. R. and E. A	Newark, N. J	Lanterns, street	Dec. 11, 1866.
53,924	Hunt, C. D., assignor to the American Nail Machine Company	Fairhaven, Mass	Nail-plate feeder	Apr. 10, 1866.
54,910	Hunt, Ebenezer	Danversport, Mass	Buildings, process of building concrete and mortar walls for	May 22, 1866.
58,646	Hunt, E. S	Weymouth, Mass	Rockets	Oct. 9, 1866.
54,911	Hunt, Frank P	Medina, N. Y	Stove-pipe drum	May 22, 1866.
2,368	Hunt, Franklin Benjamin	Richmond, Ind	Straw cutters (Reissue)	Oct. 2, 1866.
60,378	Hunt, G. G	Bridgeport, Conn	Valves, steam	Dec. 11, 1866.

53,448	Hunt, Harvey	Oskaloosa, Iowa	Centrifugal machine	Mar. 27, 1866.
55,659	Huut, H. C	Amboy, Ill	Supporters, window sash	June 19, 1866.
59,720	Hunt, H. C., assignor to self and C. D. Vaughan	do	Cultivators	Nov. 13, 1866.
53,623	Hunt, James G	Cincinnati, Ohio	Lainp burners	Apr. 3, 1866.
2,306	Huut, Walter, assignor through mesne assignments to the Union Paper Collar Company.		Collars, shirt (Division A, reissue)	July 10, 1866.
2,307	Same		Collars, shirt (Division B, reissue)	July 10, 1866.
56,755	Hunt, William	New York, N. Y	Jar, fruit	July 31, 1866.
56,225	Huut, Zebulon	Hudson, N. Y	Sinks, culinary	July 10, 1866.
57,140	Hunter, Butler J	Ledyard, N. Y	Harvester pitman's	Aug. 14, 1866.
55,660	Hunter, James B	Ashley, Ill	Ploughs, gang	June 19, 1866.
53,624	Hunter, John E	Mechanicsburg, Ohio	Broom heads	Apr. 3, 1866.
	Hunter, Jno. G. (*See* Turner, Jno., assignor.)			
60,632	Huuter, S. M	Terryville, Conn	Hydraulic governors	Dec. 18, 1866.
54,168	Hunter, William	Berkley Springs, West Va	Collars and neckties	Apr. 24, 1866.
59,023	Hunter, William	Detroit, Mich	Fence posts	Oct. 23, 1866.
	Hunter, William L., deceased, by Albert Gardner, administrator, and Albert Gardner.	Cincinnati, Ohio	Ploughs, constructing (Extension)	Oct. 25, 1866.
53,828	Hunter, Winford, R. S	Blackberry, Ill	Carriages, &c., attaching thills to	Apr. 10, 1866.
52,717	Hunting, C. B	Clintou, Ill	Fence	Feb. 20, 1866.
57,909	Hunting, Chester B	do	Ploughs	Sept. 11, 1866.
58,832	Huntington, Charles S	Black River, Conn	Rakes, horse	Oct. 16, 1866.
57,141	Huntington, Gideon	Almont, Mich	Tire-shrinkiug machines	Aug. 14, 1866.
	Huutiugton, L. G. (*See* Betts, Lewis F., assignor.)			
55,303	Huntington, Thomas	New Rochelle, N. Y	Boats from their davits, means of detaching	June 5, 1866.
57,910	Huntley, George R	Taunton, Mass	Faucets	Sept. 11, 1866.
54,731	Huntoon, Lafayette	Milford, Mass	Engines, steam	May 15, 1866.
56,420	Same	do	Pistons	July 17, 1866.
60,192	Huntoon, Reuben K	Boston, Mass	Eugine, steam, governors	Dec. 4, 1866.
	Huntsicker, E. A., *et al.* (*See* Parker, Thomas, J., assignor.)			
52,416	Hunzinger, George	New York, N. Y	Chair, reclining	Feb. 6, 1866.
57,142	Hurd, Edwin F	Johnsonville, N. Y	Axes, machines for making,	Aug. 14, 1866.
57,725	Hurd, George H	St. Louis, Mo	Teeth, artificial, plates for	Sept. 4, 1866.
57,726	Same	do	Dental moulds	Sept. 4, 1866.
60,520	Hurd, Joseph	Boston, Mass	Piano-fortes, repeating action for	Dec. 18, 1866.
58,421	Hurd, Wm. C	New York, N. Y	Paint, composition for	Oct. 2, 1866.
53,225	Hurford, Joseph, assignor to Joseph P. Gill	Salem, Ohio	Composition for making anatomical casts	Mar. 13, 1866.
59,508	Hurlburt, Benj., assignor to L. H. Holt	Milford, Conn	Carriage seats, construction of	Nov. 6, 1866.
52,291	Hurlbut, C. S	Springfield, Mass	Luuch-box, folding	Jan. 30, 1866.
58,944	Hurlbut, George W., assignor to self and Abram C. Wicker	Fair Haven, Conn	Paper, manufacture of	Oct. 16, 1866.
56,431	Hurley, Mary E	Baltimore, Md	Chairs, needles for caning	July 17, 1866.
55,661	Hursell, Jno. C	Boston, Mass	Dovetailing machines, cutters for	June 19, 1866.
55,871	Hursh, Joseph and Abraham	Philadelphia, Pa	Fertilizer	Juue 26, 1866.
	Hurst, Lewis, *et al.* (*See* Keudall, Juo. L., assiguor.)			
57,911	Hurst, S., and J. Douglass	Prentice, Ill	Spike drawers	Sept. 11, 1866.
2,494	Husbaud, Charles	Taunton, Mass	Paper haugings, &c. (Design)	Oct. 16, 1866.
56,054	Husband, J. L	Philadelphia, Pa	Engines, steam, fibrous packiug for. (Antedated June 19, 1866)	July 3, 1866.
54,732	Hussey, Daniel	Nashua, N. H	Drawing rollers	May 15, 1866.
59,024	Same	do	Looms, let-off for	Oct. 23, 1866.
58,945	Hussey, Daniel, assignor to Richard Kilson	do	Cotton-lappers, brakes for	Oct. 16, 1866.
56,941	Hussey, Marcus L. M	New York, N. Y	Documents, machiue for folding and filiug	Aug. 7, 1866.
57,513	Hussey, Roland C	Milford, Mass	Cutting board	Aug. 28, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,647	Hutson, Allen	Cincinnati, Ohio	Hubs	Oct. 9, 1866.
56,664	Hutchins, Hubbil, and Washington Horter	Philadelphia, Pa	Knife scourers	July 24, 1866.
59,025	Hutchins, Isaac, jr	Wellington, Me	Fumigator	Oct. 23, 1866.
59,608	Hutchins, Jno	Elmira, N. Y.	Drill or well tube	Nov. 13, 1866.
56,565	Hutchins, Seth T	North Anson, Me	Lasts	July 24, 1866.
53,982	Hutchinson, Charles B	Auburn, N. Y	Staves, machines for champing and crozing	Apr. 17, 1866.
53,983	Same	do	Staves, machines for bending	Apr. 17, 1866.
53,004	Hutchinson, Charles S	Burlington, N. J.	Building block	Mar. 6, 1866.
58,422	Hutchinson, Elias S	Baltimore, Md	Carburetters, automatic feed for	Oct. 2, 1866.
59,226	Same	do	Carburetters, in railroad cars, &c., automatic blast for	Oct. 30, 1866.
58,727	Hutchinson, Elias S., assignor to self and Hugh L. McAvoy	do	Steam, apparatus for generating	Oct. 9, 1866.
51,946	Same	do	Air, apparatus for carburetting	Jan. 9, 1866.
55,496	Hutchinson, Eugene	Manchester, N. H	Bedsteads, invalid	June 12, 1866.
52,047	Hutchinson, G. L	White Rock, Ill	Cultivators	Jan. 16, 1866.
	Hutchinson, Haywood, Jesse L., and Elias S. (*See* Ford, Chas. Henry, assignor.)			
	Same.			
	Same.			
	Same.			
52,572	Hutchinson, Jesse L	Baltimore, Md	Evaporator for hot-air pipes	Feb. 13, 1866.
55,872	Hutchinson, Jno	Three Rivers, Mich	Mills, grinding	June 26, 1866.
56,942	Hutchinson, Samuel	Griggsville, Ill	Ploughs, gang	July 31, 1866.
59,397	Hutson, Allen F	Richmond, Ind	Heater, portable	Nov. 6, 1866.
	Hutts, Paul, *et al.* (*See* Ballard & Magee, assignors.)			
57,143	Huyck, Robert	Sheboygan Falls, Mich	Harness	Aug. 14, 1866.
57,821	Hyatt, Charles M., assignor to Lansingh & Osborne	Albany, N. Y	Neck-ties, shirts, collars, together, clasps for holding	Sept. 4, 1866.
	Hyatt, Isaiah S., and Jno. W., jr., and Warren Tanner. (*See* Tanner & Hyatt.)			
	Hyatt, Thaddeus	Philadelphia, Pa	Vault covers (Extension)	Aug. 1, 1866.
53,250	Same	do	Coffee, preparation of	Mar. 13, 1866.
53,249	Same. Assignor to Elizabeth A. Lake	do	Caramel, dry, manufacture of	Mar. 13, 1866.
53,449	Hyde, Charles	North Chelmsford, Mass	Spinning machinery, flyers for	Mar. 27, 1866.
55,954	Hyde, James C., assignor to self and D. S. Thompson	West Haven, Conn	Hinges, butt	June 26, 1866.
2,437	Hyde, James R., assignor to F. A. Sheldon and C. O. Greene	Troy, N. Y	Stove, cook (Design)	Sept. 25, 1866.
51,904	Hyde, James S., deceased, by Wm. Peet and Marian L. Hyde, administrators.	Brooklyn, N. Y	Railways, construction of	Jan. 2, 1866.
58,262	Hyde, James W	Lewiston, Ill	Coffins, measuring scales for	Sept. 25, 1866.
59,398	Hyde, Joseph	Troy, N. Y	Whiffletree coupling	Nov. 6, 1866.
55,009	Hyde, Walter, assignor to Deborah A. Ballou	New York, N. Y	Drilling machine, rock	May 29, 1866.
	Hydrostatic Paper Company. (*See* Jones & Farquharson, assignors.) Reissue			
	Same.			
59,026	Hyers, Benjamin S	Pekin, Ill	Fastenings, sash	Oct. 23, 1866.
60,633	Same	do	Fastenings, sash	Dec. 18, 1866.
	Hyers, B. S. & F. Nishevitz. (*See* Nishevitz & Hyers.)			

54,912	Hyzer, Jacob B.	Janesville, Wis	Radiator, heat	May 22, 1866.
	Ihms, Anthony. (*See* Bressler, Jno. S., assignor.)			
57,144	Ilgin, Lewis T	Cedarville, Ill	Clothes dryer	Aug. 14, 1866.
57,913	Illingworth, B	Freeport, Ill	Churns	Sept. 11, 1866.
59,315	Illingsworth, B., assignor to J. B. Byerly and C. A. Sheetz	do	Sifter, flour	Oct. 30, 1866.
52,050	Illingsworth, F. A. & A. J	Weston, Mass	Fastening, door	Jan. 16, 1866.
54,357	Imbach, Martin G.	New York, N. Y	Printing press	May 1, 1866.
51,835	Imhorst, Ferdinand	do	Lamp-chimney cleaners	Jan. 2, 1866.
55,215	Ince, Thomas Henry	England	Horses, method of attaching shoes to	May 29, 1866.
55,018	Ingalls, A	Independence, Iowa	Plough carriage	May 29, 1866.
59,027	Ingalls, Gustavus W	Concord, N. H	Melodeons, &c., reed-plates for	Oct. 23, 1866.
53,829	Ingalls, Joshua K	New York, N. Y	Oil tanks	Apr. 10, 1866.
54,733	Ingalls, William A	Chicago, Ill	Screws for stools, &c.	May 15, 1866.
54,551	Same. Assignor to William W. Kimball	do	Stool, piano	May 8, 1866.
53,005	Ingels, Joseph	Milton, Ind	Drills, grain	Mar. 6, 1866.
53,006	Ingersoll, Marshall	Grafton, Ohio	Car brake, railroad	Mar. 6, 1866.
54,913	Same	do	Car coupling	May 22, 1866.
52,417	Ingersoll, R. H	Washington, D. C	Billiard register	Feb. 6, 1866.
	Ingham, A., *et al.* (*See* Brown, Ingham & Lomont.)			
57,514	Ingraham, Cornelia F	Indianapolis, Ind	Sewing-machine bobbins	Aug. 28, 1866.
59,028	Ingraham, Henry C	Tecumseh, Mich	Ditching machine	Oct. 23, 1866.
	Inman, H., *et al.* (*See* Sheldon, Thomas, assignor.)			
57,145	Inman, Hiram	Hagaman's Mills, N. Y	Lathes for turning wagon hubs	Aug. 14, 1866.
52,573	Inman, Otis M	Providence, R. I	Braiding machines	Feb. 13, 1866.
54,552	Insul, John and Thomas	New Haven, Conn	Furnace cupola	May 8, 1866.
52,373	Ireland, George	England	Bottle handle. (Antedated January 26, 1866.)	Jan. 30, 1866.
55,873	Irion, Andrew	Femme Osage, Mo	Washing machine	June 26, 1866.
55,497	Irons, E. P	Baltimore, Md	Saw mills	June 12, 1866.
59,155	Irving, Cornelius L., and A. B.	Fort Wayne, Ind	Piano-forte action	Oct. 23, 1866.
60,634	Irving, Joseph	New York N. Y	Wheels, fifth	Dec. 18, 1866.
60,635	Irving, Thomas, John McNeil, George W. Rich and Cyrus J. Field	Elwood, N. Y	Paper, water and fire proof, manufacture of	Dec. 18, 1866.
54,553	Irwin, John H	Chicago, Ill	Illuminating apparatus	May 8, 1866.
57,914	Same	do	Lanterns	Sept. 11, 1866.
57,915	Same	do	Gas, retort for generating	Sept. 11, 1866.
60,521	Isaacs, Isaac A	Cleveland, Ohio	Baths, foot	Dec. 18, 1866.
58,833	Isaacs, Russell N	New York, N. Y	Fishing rods	Oct. 16, 1866.
57,327	Isaacs, William H	Terre Haute, Ind	Evaporator	Aug. 21, 1866.
59,227	Isaacsohn, D., and Adolph Cohn	New York, N. Y	Victorine, cape, and cuff, combined	Oct. 30, 1866.
	Isbell, C. W., and P. W. McKenzie. (*See* Mackenzie & Isbell.)			
56,055	Iske, Anthony	Lancaster, Pa	Cigar press	July 3, 1866.
59,029	Ivers, Alfred	New York, N. Y	Water-closets, urinals, &c., cistern for	Oct. 23, 1866.
	Ives, William A. (*See* Peck, Obed, assignor.)			
57,328	Iwerson, Hannah S. C	New York, N. Y	Headdresses for ladies	Aug. 21, 1866.
52,051	Jackson, Albert	Clifton Springs, N. Y	Fence	Jan. 16, 1866.
54,914	Same	do	Rack, hay, for wagons	May 22, 1866.
56,056	Same	do	Rack, milk	July 3, 1866.
57,916	Jackson, A. W	Centralia, Ill	Piston packing	Sept. 11, 1866.
56,756	Jackson, Edward H	Boston, Mass	Car, dumping	July 31, 1866.
56,943	Jackson, George N	Chicago, Ill	Computation cards, sliding slate for	Aug. 7, 1866.
55,109	Jackson, Joel C	Rochester, N. Y	Wrenches, screw	May 29, 1866.
56,499	Jackson, Luther, ass'r to Edgar Farmer and William H. Cleveland	Newark, N. J	Trunks	July 17, 1866.
57,146	Jackson, Peter H	New York, N. Y	Windlass, ships	Aug. 14, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,841	Jackson, Samuel, jr	New York, N. Y	Saw mills	Nov. 20, 1866.
2,509	Same	Roxbury, Mass	Carriage, hat, advertising	Nov. 27, 1866.
	Jacobic, F., and D. W. Seeley. (*See* Seeley & Jacobie.)			
54,915	Jacobs, Beruard	New York, N. Y	Gas fixtures, attachments to	May 22, 1866.
	Jacobs, G. M., and John T. Bruen. (*See* Bruen & Jacobs.)			
56,566	Jacobs, Joseph A	Pittsfield, N. H	Stove-pipe damper	July 24, 1866.
59,399	Jacobs, Robert B	Quincy, Ill	Boots, gaiter	Nov. 6, 1866.
57,147	Jacoby, David	Mendota, Ill	Ploughs	Aug. 14, 1866.
53,984	Jacoby, Josiah	Doylestown, Ohio	Eaves-troughs	April 17, 1866.
56,944	Jacoby, William H	Xenia, Ohio	Stereoscope, convertible	Aug. 7, 1866.
53,970	Jacovenco, Paul	Wallachia	Petroleum tank	June 6, 1866.
54,358	Jaeger, William G. W	Baltimore, Md	Distillation, continuous apparatus for. (Antedated April 16, 1866.)	May 1, 1866.
60,522	Jahne, Henry, ass'r to self, Gerrit Smith, and A. J. G. Hodenpyl	New York, N. Y	Watch-chain fastening	Dec. 18, 1866,
54,359	Jahrans, Jacob	Buffalo, N. Y	Faucet, beer	May 1, 1866.
56,945	James, Charles H	Cincinnati, Ohio	Dentists, vulcanizing flasks for	Aug. 7, 1866.
55,772	James, Christopher R, assignor to self and N. W. Condict, jr	Jersey City, N. J	Hammers and stamps, operating	June 19, 1866.
54,734	James, Thomas, assignor to self and P. De Murgniondo	Baltimore, Md	Brick moulds	May 15, 1866.
55,203	James, Thomas, assignor through mesne assignments to self, J. McCrellish, and C. H. White.	Medford, Mass	Leather, harness, &c., blacking for	May 29, 1866.
56,057	Jameson, Abiezer	Trenton, N. J	Vices	July 3, 1866.
56,946	Jamison, Andrew	Taylorstown, Pa	Engine, steam, valves	Aug. 7, 1866.
54,735	Jamison, John P	New York, N. Y	Crimping machine	May 15, 1866.
52,574	Jann, John	New Windsor, Md	Fluid, burning	Feb. 13, 1866.
55,304	Same	....do	Harvesters	June 5, 1866.
57,727	Same	....do	Fluid, burning	Sept. 4, 1866.
59,770	Same	....do	Harvesters, &c., tools for sharpening sickles of	Nov. 20, 1866.
55,305	Jauncy, E. H., and E. J. Hamilton	Fairfax, Va	Fastener, door, portable	June 5, 1866.
59,030	Jaques, David L	Hudson, Mich	Pumps	Oct. 23, 1866.
58,423	Jaques, George M	Boston, Mass	Composition for destroying insects	Oct. 2, 1866.
	Jaques, Henry H. (*See* Boyden, Seth, assignor.)			
59,228	Jarrett, James M	Brooklyn, N. Y	Mail bags, water-proof	Oct. 30, 1866.
	Jarrett, T. T., assignor through mesne assignments to B. F. Hisert and G. W. Gregory.	Horsham, Pa	Hay-elevating forks (Disclaimer)	April 16, 1866.
60,379	Jasper, G. A	Charlestown, Mass	Steam pipes	Dec. 11, 1866.
53,534	Jasper, Gustavus A., assignor to the Union Sugar Refinery	....do	Charcoal, animal, cleansing	Mar. 27, 1866.
52,575	Jauriet, C. F	Aurora, Ill	Packing for stuffing boxes, metallic	Feb. 13, 1866.
52,362	Jauriet, Charles F., assignor to self and A. J. Ambler	....do	Spark arresters	Jan. 30, 1866.
52,945	Same	....do	Steam generators, fire boxes of	Feb. 27, 1866.
52,418	Jayne, Ebenezer C	Philadelphia, Pa	Printing on glass, porcelain, &c., method of	Feb. 6, 1866.
52,419	Jeanne, Paul	Brooklyn, N. Y	Tobacco pipe	Feb. 6, 1866.
52,856	Jefferey, Edwin A	New Haven, Conn	Coal hod	Feb. 27, 1866.
55,662	Jenckes, Welcome	Manchester, N. H	Spinning machines, ring traveller, cleaners for	June 19, 1866.
	Jenkins, C. E., and J. F., *et al.* (*See* Porter & Jenkins.)			
56,567	Jenkins, Eugene N	Chicago, Ill	Lanterns	July 24, 1866.
58,424	Same	....do	Heater, sad iron	Oct. 2, 1866.

55,663	Jenkins, F. W.	Brooklyn, N. Y.	Cars, railway, for preventing accidents	June 19, 1866.
	Jenkins, Henry	....do	Fence, iron, ornamental, connection of the parts of an. (Extension.)	Jan. 9, 1866.
		Jackson, Ill.	Hoe, scuffle	May 22, 1866.
54,916	Jenkins, J. D.	Yorkville, N. Y.	Washing machine	June 5, 1866.
55,306	Jenkins, James Hervey	Philadelphia, Pa.	Belt guides	Sept. 11, 1866.
57,917	Jenkins, Lewis R.	Boston, Mass.	Packing, elastic, manufacture of	May 8, 1866.
54,554	Jenkins, Nathaniel	....do	Water gates. (Antedated August 15, 1866.)	Aug. 21, 1866.
57,329	Same			
	Same. (*See* Robinson, Daniel T., assignor.)			
		New York, N. Y.	Steel, process for making	April 3, 1866.
53,625	Jenkins, Thomas H.	Bellefonte, Pa.	Engines, steam, slide valves for	April 17, 1866.
53,985	Jenkins, W. R., jr., and H. D. Landis	Bridesburg, Pa.	Wood, &c., process for coloring	May 29, 1866.
55,110	Jenks, Barton H.	....do	Wood for the manufacture of carding machines, treating	May 29, 1866.
53,111	Same	....do	Hoisting apparatus	Aug. 7, 1866.
56,947	Same	....do	Cop-winding machines	Aug. 21, 1866.
57,330	Same	....do	Wood, process of seasoning	Oct. 2, 1866.
58,425	Same	....do	Looms, heddle motion for	May 22, 1866.
55,010	Jenks, Barton H., and Robert B. Goodyear, assignors to Barton H. Jenks.	Philadelphia, Pa.	Looms	May 22, 1866.
55,011	Same	....do	Drills, rock	June 5, 1866.
55,307	Jenks, Lemuel P., and George A. Gardner	New York, N. Y.	Water drawers	July 24, 1866.
	Jenks, Lemuel P., and George Clark, jr. (*See* Clark & Jenks.)		Knife and fork combined	Sept. 11, 1866.
56,568	Jenks, M. W.	Richmond, Ind.	Seal fastener, metallic	Dec. 4, 1866.
57,918	Jennings, John S.	Buffalo, N. Y.	Envelope, metallic seal	June 26, 1866.
	Jennings, John S., *et al.* (*See* Thomson, Smith & Jennings.)		Augers	Jan. 16, 1866.
60,193	Jennings, Ralph S.	New York, N. Y.	Auger blanks, dies for swaging the ends of	(Reissue)
55,955	Jennings, Ralph S., assignor to self and Norman G. Kellogg	....do	Augers, tool for finishing	June 12, 1866.
2,146	Jennings, Russell.	Deep River, Conn.	Augers, screw, machinery for swaging the heads of	July 3, 1866.
55,498	Same	....do	Fly and mosquito bar	July 31, 1866.
56,058	Same	....do	Boots and shoes, mode of securing tips to	Mar. 13, 1866.
56,869	Same	....do	Ditching machine. (Antedated October 7, 1866.)	Mar. 13, 1866.
53,149	Jennings, T. Henry	New Bedford, Mass.	Tool for cutting tubes	Oct. 16, 1866.
53,150	Same	....do		Dec. 11, 1866.
58,834	Jensen, Goodman	Brooklyn, N. Y.		
60,380	Jepson, John V.	....do		
	Jerold, J. E., *et al.* (*See* Zellner, William, assignor.)			
	Same. (*See* Rounds, M. M., assignor.)			
		Waltham, Mass.	Syringes, sprinkling, for gardens	July 31, 1866.
56,757	Jewell, A. L.	Malone, N. Y.	Pot and pearl ash, manufacture of	Sept. 4, 1866.
57,728	Jewett, Benjamin F.	Sand Spring, Bowen's Prairie, Iowa.	Hay loaders	Jan. 9, 1866.
51,947	Jewett, De Witt C., and Asa C. Bowen	Buffalo, N. Y.	Refrigerators, bars or slats for	Dec. 18, 1866.
60,523	Jewitt, John C.	Haverhill, Mass.	Boot and shoe bottoms, machine for facing	June 19, 1866.
55,664	Jewitt, N. B., and E. Everson	Philadelphia, Pa.	Fibrous and textile substances, apparatus for washing and bleaching. (Reissue.)	July 24, 1866.
2,320	Jillson, J. A., and H. Whinfield, assignors through mesne assignments to John G. Ford.		Hearses	Oct. 16, 1866.
58,835	Jincks, Melvin, and F. Altmeyer	Danville, N. Y.	Carriage tops, shifting rails for	April 24, 1866.
54,169	Johns, Shadrach	Waupun, Wis.	Mitre joints, machines for trimming	June 12, 1866.
55,499	Johnson, Albert	Putnam, Conn.	Lanterns, street	Aug. 15, 1866.
57,148	Johnson, B. A.	Jeffersonville, Ind.		
	Johnson, Charles G. (*See* Swett, Charles, assignor.)			
2,144	Johnson, Charles W.	Waterbury, Conn.	Presses, power (Reissue.)	Jan. 9, 1866.
	Johnson, David M., and George Partridge. (*See* Partridge & Johnson.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,555	Johnson, Ezra	Hermon, Me	Pipe, stove, and water conductor, mode of connecting the joints of	May 8, 1866.
55,500	Johnson, Frank G	Brooklyn, N. Y	Locks, knob	June 12, 1866.
56,059	Johnson, Frank G	Brooklyn, N. Y	Drill chucks	July 3, 1866.
	Johnson, Frank G., and Wilson Bohannen. (*See* Bohannen & Johnson.)			
57,515	Johnson, George H	Baltimore, Md	Vault lights	Aug. 28, 1866.
	Johnson, George H., and David L. Bartlett. (*See* Bartlett & Johnson.)			
	Same.			
54,360	Johnson, George R	Wilmington, Del	Morocco, machine for graining	May 1, 1866.
57,331	Johnson, Isaac H	Long Reach, West Virginia	Press, hay	Aug. 21, 1866.
53,007	Johnson, J., and C. W. Singer, assignors to selves and Abel Loud	Saginaw, Mich. / Anderson's store, Va.	Pumps	Mar. 6, 1866.
58,426	Johnson, Job	Brooklyn, N. Y	Oyster rakes	Oct. 2, 1866.
	Same. (*See* Lapham, Allen, assignor.)			
54,251	Johnson, Job, and Hezekiah Howarth, assignors to Job Johnson	....do	Fish-hooks	Apr. 24, 1866.
	Johnson, Job, and Henry Essex. (*See* Essex & Johnson.)			
54,917	Johnson, John	Saco, Maine	Oils, light, from wells, collecting the. (Antedated May 10, 1866.)	May 22, 1866.
56,948	Same	....do	Dredging machines	Aug. 7, 1866.
57,332	Same	....do	Scales, automatic calculators for	Aug. 21, 1866.
	Johnson, J. B., and Charles H. Trask. (*See* Trask & Johnson.)			
58,264	Johnson, J. H	Paducah, Ky	Steam blowers. (Antedated September 10, 1866)	Sept. 25, 1866.
53,986	Johnson, John M	Mamaroneck, N. Y	Buttons	Apr. 17, 1866.
54,736	Same	New York, N. Y	Buttons	May 15, 1866.
60,194	Same	....do	Buttons, fastenings for	Dec. 4, 1866.
58,263	Johnson, Jonathan	Kent, Ind	Mangers	Sept. 25, 1866.
53,151	Johnson, Josee	New York, N. Y	Jar, fruit	Mar. 13, 1866.
54,556	Same	....do	Buttons, fastenings for	May 8, 1866.
56,226	Same	....do	Jar, fruit	July 10, 1866.
	Johnson, J. T., and Joseph Burchnall. (*See* Burchnall & Johnson.)			
2,251	Johnson, Moses A	Lowell, Mass	Fabric, felted (Reissue)	May 22, 1866.
2,371	Same	....do	Goods, felted (Design)	July 24, 1866.
60,381	Same	....do	Roofing and other purposes, fire-proof felt for	Dec. 11, 1866.
	Johnson, Moses A., *et al.* (*See* Murkland, Wm., assignor.)			
59,031	Johnson, Moses A., and William Murkland	....do	Hat bodies, machine for moulding, felting, and fulling	Oct. 23, 1866.
55,112	Johnson, Niels	Ripon, Wis	Whiffletrees	May 29, 1866.
57,516	Same	....do	Pumps	Aug. 28, 1866.
	Johnson, N. L. (*See* Richardson, George M., assignor.)			
58,427	Johnson, Thomas	Elmira, N. Y	Watches	Oct. 2, 1866.
	Johnson, T. M., *et al.* (*See* Havens, Johnson & Howe.)			
55,665	Johnson, William	Milwaukee, Wis	Caster for furniture	June 19, 1866.
57,149	Johnson, W. J	Newton, Mass	Lamp chimney cleaners	Aug. 14, 1866.
	Johnson, W. R., *et al.* (*See* Howarth, David, assignor.)			
57,729	Johnston, Algernon K	New York, N. Y	Gas, apparatus for carburetting	Sept. 4, 1866.
60,524	Johnston, James G	Allegheny, Pa	Tanning	Dec. 18, 1866.

	Johnston, J. J., and W. Leonard. (*See* Leonard & Johnston.)			
2,276	Jones, Alfred F	Lexington, Ky	Diseases, vacuum apparatus for treating (Reissue)	June 5, 1866.
54,557	Jones, A. T	Stamford, Conn	Water elevators for wells	May 8, 1866.
	Jones, Bradford. (*See* Cook, Edward, assignor.)			
	Jones, C. and Cadbury. (*See* Savill, Thomas, assignor.)			
56,758	Jones, Charles	Boston, Mass	Wool-oiling machinery for carding machines, &c	July 31, 1866.
56,506	Jones, Charles William	England	Fire-arms, adjustable stock of	July 17, 1866.
53,008	Jones, Edward	San Francisco, Cal	Paddle wheels	Mar. 6, 1866.
55,666	Jones, Edward E., and G. L. Kitson	Philadelphia, Pa	Top, spinning	June 19, 1866.
	Jones, Edward H., and Charles W. Noyes. (*See* Hallett, James E., assignor.)			
56,227	Jones, E. O	Oakwood, Mich	Rakes, horse	July 10, 1866.
55,667	Jones, Frank	Boston, Mass	Bricks, manufacture of	June 19, 1866.
54,558	Jones, F. H	Attica, N. Y	Water-drawer	May 8, 1866.
59,609	Jones, George, and Beverly E. Mead	Peekskill, N. Y	Door knobs to shanks, fastening	Nov. 13, 1866.
	Jones, George H., and Henry C. Berlin. (*See* Waymoth, Thos. V., assignor.) Reissue.			
60,382	Jones, Gilbert D	New York, N. Y	Drying artists' materials, apparatus for	Dec. 11, 1866.
54,834	Jones, George T	Cincinnati, Ohio	Bank notes, manufacturing	May 15, 1866.
54,835	Same	do	Bank notes, to prevent counterfeiting, mode of preparing	May 15, 1866.
	Jones, Harvey E., and J. N. Sturtevant. (*See* Sturtevant & Jones.)			
53,152	Jones, Henry L., and Duncan S. Farquharson	Rochester, N. Y	Paper pulp, apparatus for bleaching	Mar. 13, 1866.
55,418	Jones, H. L., and D. S. Farquharson, assignors to selves, A. M. Hastings, and A. McVean.	do	Paper pulp, treating wood, straw, &c., for the manufacture of	June 5, 1866.
2,383	Jones, H. L., and D. S. Farquharson, assignors through mesne assignments to the Hydrostatic Paper Company.	do	Paper pulp, treating wood, straw, &c., for the manufacture of. (Reissue.)	Oct. 23, 1866.
2,384	Same	do	Paper pulp, apparatus for bleaching	Oct. 23, 1866.
57,150	Jones, Henry M	West Meriden, Conn	Fastenings, latch	Aug. 14, 1866.
60,383	Jones, Horace C	Dowagiac, Mich	Baskets	Dec. 11, 1866.
52,052	Jones, H. P	Davenport, Iowa	Washing machine	Jan. 16, 1866.
59,229	Jones, Isaac	Camden, N. J	Books, machine for cutting the fronts of. (Antedated October 20, 1866.)	Oct. 30, 1866.
57,919	Jones, John	Baltimore, Md	Brick machine	Sept. 11, 1866.
54,170	Jones, John W	Portland, Maine	Corn from the cob, knife for removing	Apr. 24, 1866.
	Same. (*See* Sloan, John, assignor.)			
56,759	Jones, Jonathan M. Barnerd Spaulding, and Sylvester Parkins	East Taunton, Mass. Port Richmond, N. Y. Providence, R. I.	Iron, sheet and bar, manufacture of	July 31, 1866.
52,719	Jones, Joseph	Newark, N. J	Carpenter's shooting boards	Feb. 20, 1866.
53,450	Jones, J. Herva	Rockford, Ill	Harvester rakes	Mar. 27, 1866.
59,401	Jones, P. Franklin	Ballston Spa, N. Y	Railroad rail	Nov. 6, 1866.
59,148	Jones, Ralph A., and Joseph Hedges	England	Telegraphic signals	Oct. 23, 1866.
53,738	Jones, Richard, assignor to self and Thomas Bromley	Paterson, N. J	Vice, bench	Apr. 3, 1866.
	Jones, R. E., and T. R. Robinson. (*See* Robinson & Jones.)			
56,060	Jones, Robert V	Canton, Ohio	Railroad switch	July 3, 1866.
56,760	Same	do	Railroad rails	July 31, 1866.
57,333	Same	do	Barrels, oil, lining for	Aug. 21, 1866.
54,361	Jones, Samuel F	St. Paul, Ind	Traps, animal	May 1, 1866.
56,228	Same	do	Water elevators	July 10, 1866.
	Jones, Samuel T., deceased, by Martha M. Jones, administratrix	Staten Island, N. Y	Zinc, white, manufacture of (Extension)	Feb. 23, 1866.
57,987	Jones, Sylvanus D	Providence, R. I	Sifter, flour	Apr. 17, 1866.
52,644	Jones, Thomas J., assignor to C. J. Eames	Summit, N. J	Piston packing	Feb. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,170	Jones, Thomas J., assignor to Charles J. Eames and Wesley Welty	Summit, N. J	Pumps, attachment for	Sept. 18, 1866.
54,737	Jones, Warren	Berlin, Wis	Bed bottom	May 15, 1866.
59,912	Jones, Wiley	Norfolk, Va	Boots and shoes lengthways, stretching	Nov. 20, 1866.
56,949	Jones, William, and M. H. Collins	Chelsea, Mass	Burner, Aërogas	Aug. 7, 1866.
59,610	Jones, William Ashley	Dubuque, Iowa	Vehicles	Nov. 13, 1866.
53,988	Jones, W. O	Portland, Maine	Steering apparatus	Apr. 17, 1866.
	Jones, W. O., and John W. Munger. (*See* Munger & Jones.)			
53,759	Jopling, Jonathan	England	Vessels, propelling and steering apparatus for	Apr. 3, 1866.
	Joralemon, Walter. (*See* Campbell, John W., assignor.)			
	Jordon, Charles, *et al.* (*See* Carver, J. E., assignor.)			
54,171	Jordon, David C., sr	Brooklyn, N. Y	Hinge	Apr. 24, 1866.
59,400	Jordon, John	Wyandotte, Kansas	Pumps, steam	Nov. 6, 1866.
59,402	Joslin, Henry W	Brooklyn, N. Y	Leather, rubber-coated	Nov. 6, 1866.
51,836	Joslyn, Benjamin F	Stonington, Conn	Fire-arms, revolving. (Antedated December 26, 1865.)	Jan. 2, 1866.
51,837	Same	....do	Fire-arms, breech-loading	Jan. 2, 1866.
52,248	Josselyn, Henry S., assignor to self and W. E. Woodward	Roxbury, Mass	Fire-arms, revolving	Jan. 23, 1866.
59,403	Jouett, James E	Brooklyn, N. Y	Chair, couch and stretcher	Nov. 6, 1866.
59,771	Jourdan, Adolph S	Nashville, Tenn	Cement. (Antedated November 9, 1866)	Nov. 13, 1866.
	Jourdan, Louis, and Emile Sabathé. (*See* Sabathé & Jourdan.)			
59,524	Joy, David	England	Hammers, steam, valves for	Nov. 6, 1866.
58,648	Joy, Thaddeus C	Titusville, Pa	Oil tanks, construction of	Oct. 9, 1866.
57,517	Joyce, Jacob O	Dayton, Ohio	Centrifugal machine	Aug. 28, 1866.
56,950	Joyner, Albert	Elton, Wisconsin	Washing machine	Aug. 7, 1866.
59,032	Jucket, E. B., assignor to self and Hunneman and Company	Roxbury, Mass	Flywheel and crank shaft, combined	Oct. 23, 1866.
57,635	Jucket, Edward B., assignor to Hunneman and Company	....do	Pumps	Aug. 28, 1866.
52,857	Judd, Albert D	New Haven, Conn	Tassel, hook	Feb. 27, 1866.
59,404	Same	....do	Nails, picture	Nov. 6, 1866.
52,229	Judd, Daniel	Hinsdale, N. Y	Excavators	July 10, 1866.
56,951	Judd, Oliver S	New Britain, Conn	Hooks, snap	Aug. 7, 1866.
56,952	Judson, Anson	Brooklyn, N. Y	Lamp chimneys	Aug. 7, 1866.
59,772	Same	....do	Lamp burners	Nov. 20, 1866.
54,918	Judson, Frederick	Jersey City, N. J	Horseshoes, calks for	May 22, 1866.
56,061	Judson, Whiteomb	Galesburg, Ill	Hogs from rooting, device for preventing	July 3, 1866.
52,292	Jung, Heinrich	Port Chester, N. Y	Drill, rock	Jan. 30, 1866.
	Justice, Philip S. (*See* Shaw, Thomas, assignor.) Reissue.			
56,230	Justin, Julius J	Milwaukee, Wis	Bee-hives	July 10, 1866.
53,989	Kaestner, Charles and Augustus	Chicago, Ill	Mills, grinding	Apr. 17, 1866.
53,830	Kaffer, Francis X	Champaign City, Ill	Hames	Apr. 10, 1866.
59,129	Kailey, John, assignor to self and W. H. Alexander	Canton, Ohio	Carpet stretcher	Oct. 23, 1866.
	Kalbfleisch, F. W. (*See* Zinck, Theodore, assignor.)			
57,519	Kammerl, G., and D. L. Bollermann	New York, N. Y	Dress elevators	Aug. 28, 1866.
	Kammüller, Louis, and Matthew Tschirgi. (*See* Tschirgi & Kammüller.)			
54,738	Kane, Charles	Pittsburg, Pa	Bolts, dies for heading	May 15, 1866.
53,831	Kane, Charles and James	....do	Bolt-heading machines	Apr. 10, 1866

53,832	Same	....do	Bolt machines	Apr. 10, 1866.
	Kane, Charles J., and Phineas L. Slayton. (*See* Slayton & Kane.)			
52,420	Kane, Thomas M., and Conrad Brown	Goshen, N. Y	Caster for furniture	Feb. 6, 1866.
	Kann, Isidor. (*See* Mannon, Benjamin, assignor.)			
59,405	Kappel, Samuel S	Woodhull, Ill	Gates	Nov. 6, 1866.
56,231	Karelsen, J. E	New York, N. Y	Diamond holder	July 10, 1866.
55,668	Karicofe, William H	Harrisonburg, Va	Planter, corn	June 19, 1866.
56,232	Kasson, A. C	Milwaukee, Wis	Cooking apparatus	July 10, 1866.
60,195	Kasson, A. C., assignor to self and Nelson C. Gridley	....do	Hocs	Dec. 4, 1866.
54,919	Kast, Ernst	Waterbury, Conn	Desk, reading	May 22, 1866.
58,548	Kast, J. G., assignor to L. L. Arnold	New York, N. Y	Locks for trunks	Oct. 2, 1866.
53,833	Katen, Lewis	Green Point, N. Y	Ruler, blotter, and paper-cutter, combination of	Apr. 10, 1866.
59,033	Kauffmann, Henry	York, Pa	Hay forks, horse	Oct. 23, 1866.
	Kaufman, Peter. (*See* Bergen, Jacob, assignor.)			
2,327	Kaufmann, Ernest	Philadelphia, Pa	Pitcher (Design)	May 22, 1866.
	Kautz, Jacob, and George Lauter. (*See* Lauter & Kautz.)			
60,012	Kavanaugh, John H	Joliet, Ill	Car-coupling	Nov. 27, 1866.
55,308	Kay, Edward	Philadelphia, Pa	Knitting machines, stop-motion for	June 5, 1866.
55,501	Kaylor, Edward	Pittsburg, Pa	Bolt-heading machines	June 12, 1866.
56,062	Same	....do	Nuts, machine for making	July 3, 1866.
	Kayser, H. (*See* Mathis, J., assignor.)			
57,920	Kearney, William	Belleville, N. J	Water pipes, valves for	Sept. 11, 1866.
57,334	Keating, George	Thomaston, Maine	Mitre boxes	Aug. 21, 1866.
59,230	Keating, John H	Marblehead, Mass	Punches, gang	Oct. 30, 1866.
56,507	Keck, Rudolph, assignor to F. W. Woods, S. D. Stanbro, J. Warren, and J. H. Royce.	Chicago, Ill	Mirrors, silvering	July 17, 1866.
54,172	Kee, James, and John Sloan	Philadelphia, Pa	Ash box	Apr. 24, 1866.
58,563	Keeble, George	Great Britain	Paper into shorter ones, stop-cutters for cutting continuous sheets of.	Oct. 2, 1866.
59,611	Keegan, Vincent E	Roxbury, Mass	Saltpetre, manufacture of	Nov. 13, 1866.
	Keeler, A. S., *et al.* (*See* Baumgarten, Moritz, assignor.) Same.			
57,043	Keeler, Edward L., assignor to self and Joseph Graff	Allegheny, Pa	Chain links, machines for bending	Aug. 7, 1866.
53,451	Keeler, Joel F	Pittsburg, Pa	Oil, &c., portable tanks for	Mar. 27, 1866.
54,920	Same	....do	Boiler heads, machinery for forming flanges upon	May 22, 1866.
57,921	Same	....do	Scale beams	Sept. 11, 1866.
	Keeler, William F., *et al.* (*See* Chapman, William B., assignor.)			
58,171	Keen, Clement, assignor to Keen & Co	Philadelphia, Pa	Floors, covering for	Sept. 18, 1866.
	Keen, J. M., *et al.* (*See* Robbins, R. C., assignor.) Reissue.			
2,152	Keenan, Philip, and Edmund O'Connor	West Manchester, Pa	Furnace, puddling (Reissue)	Jan. 23, 1866.
56,953	Keene, J. W., and W. E. Snediker	Utica, N. Y	Broom head	Aug. 7, 1866.
59,034	Keene, Washington E	Lynn, Mass	Funnels, measuring	Oct. 23, 1866.
56,569	Keener, Charles H	Baltimore, Md	Racks, hat	July 24, 1866.
56,063	Keep, J. M., and S. R. Drummer	New York, N. Y	Sprinkler and dredger	July 3, 1866.
58,428	Keep, James M	....do	Card rack. (Antedated September 18, 1866)	Oct. 2, 1866.
59,406	Same	....do	Sprinkler for powdered substances	Nov. 6, 1866.
	Keer, J., *et al.* (*See* Marx, Ernst, assignor.)			
59,035	Kegg, William	Lassellsville, N. Y	Cattle gag	Oct. 23, 1866.
58,265	Keiler, Levi	Catawissa, Pa	Lamp-chimney cleaners	Sept. 25, 1866.
59,612	Keith, Eli, and Dell Bird	La Fontaine, Ind	Spokes in wagon wheels, machines for driving	Nov. 13, 1866.
60,384	Keith, Elias H	Peoria, Ill	Car-coupling	Dec. 11, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
2,335	Keith, Jeremiah, assignor, through mesne assignments, to Elmer Townsend.	Boston, Mass	Shoes, &c., machines for punching and eyeleting ...(Reissue)..	Aug. 14, 1866.
54,362	Keith, John	Worcester, Mass	Pen-holder springs, machine for forming	May 1, 1866.
59,407	Same	....do	Lathes for turning pen handles	Nov. 6, 1866.
2,274	Kellett, Samuel	San Francisco, Cal	Flowers, centre, architectural (Design)..	Mar. 6, 1866.
2,275	Same	....do	Flowers, centre, architectural (Design)..	Mar. 6, 1866.
2,276	Same	....do	Flowers, centre, architectural (Design)..	Mar. 6. 1866.
2,438	Same	....do	Centre piece (Design)..	Sept. 25, 1866.
2,439	Same	....do	Centre piece (Design)..	Sept. 25, 1866.
56,570	Kellogg, C. A.	Elyria, Ohio	Bed bottom	July 24, 1866.
52,645	Kellogg, E. C. C., assignor to self, L. F. Bennett, and D. H. Burrill.	Hartford, Conn	Lacing device	Feb. 14, 1866.
59,721	Same	....do	Gauges for determining angles	Nov. 13, 1866.
	Kellogg, H., and C. O. Crosby. (*See* Crosby & Kellogg.) Reissue.			
52,363	Kellogg, Henry, assignor to H. B. Bigelow and Daniel P. Calhoun	New Haven, Conn	Mills, quartz	Jan. 30, 1866.
51,838	Kellogg, John C.	Thorntown, Ill	Fastening sash	Jan. 2, 1866.
57,730	Kellogg. J. D., jr	Northampton, Mass	Churns	Sept. 4, 1866.
	Kellogg, Norman G. (*See* Jennings, Ralph S., assignor.)			
58,429	Kellogg, O. W , and H. R. Hill	Ripon, Wis	Billiard register	Oct. 2, 1866.
57,151	Kelly, Daniel	Slatersville, R. I.	Umbrellas	Aug. 14, 1866.
2,349	Kelly, Edward F	Chicago, Ill	Tops, ornamentation of (Design)..	July 3, 1866.
55,309	Kelly, James B	Kendallville, Ind	Rowlock	June 5, 1866.
56,571	Same	....do	Turn-table	July 24, 1866.
55,310	Kelly, William	Saranac, Mich	Washing machine	June 5, 1866.
53,990	Kelly, William S	Schenectady, N. Y.	Pumps for deep wells	Apr. 17, 1866.
	Kelsey, E. A. (*See* Armington, W. W., assignor.)			
55,113	Kelsey, George R.	West Haven, Conn	Buckles	May 29, 1866.
55.311	Same	....do	Buckles	June 5, 1866.
58,430	Same	....do	Belt buckles	Oct. 2, 1866.
54,363	Kelsey, James E	Providence, R. I.	Cars, mode of stopping and starting	May 1, 1866.
56,761	Kelsey, William and A. G.	Delavan, Wis	Washing machines	July 31, 1866.
59,842	Same	....do	Boot tree	Nov. 20, 1866.
57,731	Kelsey, Zebulon S	Huntington, Ohio	Fruit gatherers	Sept. 4, 1866.
58,347	Kelso, Samuel J.,assignor to self and James Edgar	Detroit, Mich	Ciphering machines	Sept. 25, 1866.
60,385	Kemp, Bernard	Knoxville, Md.	Mills, hominy	Dec. 11, 1866.
55,956	Kendall, John L., assignor to self, R. H. Tristed, and Lewis Hurst.	New York, N. Y.	Clothes sprinkler	June 26, 1866.
53,153	Kendeigh, J. E.	Amherst, Ohio	Fence	Mar. 13, 1866.
53,626	Kenderline, Watson	Lumberville, Pa	Washing machine	Apr. 3, 1866.
59,316	Kendig, Amor D., assignor to self and John Miller	Safe Harbor, Pa	Harness	Oct. 30, 1866.
	Kendrick, G., *et al.* (*See* White, Leroy S., assignor.)			
	Kendrick, H. A., and Royal W. Stone. (*See* Stone & Kendrick.)			
54,173	Kendrick, Washington	New York, N. Y.	Evaporating and drying apparatus. (Antedated April 19, 1866.)	Apr. 24, 1866.
55,114	Same	....do	Amalgamator. (Antedated May 14, 1866.)	May 29, 1866.
52,293	Kennedy, Albert H	Brunswick, Ohio	Sheep shears	Jan. 30, 1866.

59,408	Kennedy, Albert H. and H. P.	....do	Cattle poke	Nov. 6, 1866.
58,431	Kennedy, Isaac	Ithaca, N. Y.	Ploughs	Oct. 2, 1866.
55,312	Kennedy, Martin	Boston, Mass.	Ploughs	June 5, 1866.
52,294	Kenuedy, T.	Mt. Carmel, Conn.	Screw-cutting chuck	Jan. 30, 1866.
55,115	Kennedy, Thomas	Bradford, Conn.	Door knobs to spindles, mode of adjusting. (Antedated May 20, 1866.)	May 29, 1866.
	Kent, H. K., *et al.* (*See* Hanson, J. A., assignor.)			
56,064	Kenyou, John S.	Webster City, Iowa	Bedsteads, sofa	July 3, 1866.
53,834	Kenyon, Jonathan H.	Sempronius, N. Y.	Beverage	Apr. 10, 1866.
53,835	Kepner, Solomon	Pottstown, Pa.	Bread and meat cutter	Apr. 10, 1866.
52,656	Kerpely, Anton Karl, assignor to A. L. Fleury	Austria	Iron, manufacture of	Feb. 13, 1866.
58,549	Kerr, Edwin R., assignor to self and J. L. Platt	Kewanee, Ill.	Dumping apparatus, coal	Oct. 2, 1866.
58,024	Kershaw, John B., assignor to self and James C. Dickson.	Indianapolis, Ind.	Looms	Sept. 11, 1866.
58,836	Kershaw, Robert	Philadelphia, Pa.	Threads, variegated, mode of producing	Oct. 16, 1866.
52,053	Kessler, Benjamin F.	Wilmington, Ill.	Cultivators	Jan. 16, 1866.
57,152	Ketcham, Frank	Elizabeth Township, Pa.	Latches, gate	Aug. 14, 1866.
53,304	Ketcham, Richard.	South Dansville, N. Y.	Planters, seed	Mar. 20, 1866.
	Ketchum, Wm. F., deceased, by Louisa R. Ketchum, executrix	Buffalo, N. Y.	Harvesters, grass (Extension)	Jan. 30, 1866.
58,837	Kewley, Henry	Madison, Ohio	Well, oil, tubing stop-waters for	Oct. 16, 1866.
59,843	Keyes, H.	Terre Haute, Ind.	Apple parer	Nov. 20, 1866.
55,669	Keys, Charles Bright	Washington, D. C.	Spark arresters	June 19, 1866.
54,739	Kibler, J. B.	Girard, Pa.	Pumps, sand	May 15, 1866.
58,432	Kicherer, George	Brooklyn, N. Y.	Fences	Oct. 2, 1866.
51,948	Kidder, Jerome	New York, N. Y.	Bath tubs, electrical	Jan. 9, 1866.
52,054	Same	....do.	Induction coils	Jan. 16, 1866.
58,105	Same	....do.	Magneto-electric apparatus	Sept. 18, 1866.
59,231	Kiddoo, William	Keithsburg, Ill.	Cultivators	Oct. 30, 1866.
57,922	Kidney, G. H.	Cleveland, Ohio	Washing machine	Sept. 11, 1866.
54,921	Kiefer, John	Hamilton, Ohio	Broom head	May 22, 1866.
	Kiefer, William. (*See* Burgy & Guillemin, assignors.) Reissue.			
58,106	Keiffer, N.	New Orleans, La.	Medicine	Sept. 18, 1866.
59,746	Kilbourn, Edward E., assignor to the Norfolk and New Brunswick Hosiery Company.	New Brunswick, N. J.	Sewing the seams of looped fabrics, machine for	Nov. 20, 1866.
55,670	Kilburn, Washington H.	Kennedy, N. Y.	Car brake	June 19, 1866.
53,627	Kilgore, Martin C.	Washington, Iowa	Cocks, stop	Apr. 3, 1866.
54,559	Same	....do.	Broomhead	May 8, 1866.
55,116	Killim, P. B.	Alina, Mich.	Presses, wool	May 29, 1866.
54,922	Killin, Patrick	Mount Healthy, Ohio	Whistles, alarm	May 22, 1866.
	Kilshaw, J. F., and James Goodier. (*See* Goodier & Kilshaw.)			
52,174	Kimball, Charles F., and Alexander Parsons	Portland, Maine	Bits for boring holes	Jan. 23, 1866.
56,500	Kimball, Charles W., and W. J. Norcott, deceased, by Mary E. Norcott, administratrix.	Springfield, Mass.	Cylinders, steam, of water, valves for relieving	July 17, 1866.
2,527	Kimball, Daniel B.	New York, N. Y.	Trade mark (Design)	Dec. 11, 1866.
	Kimball, George A. (*See* Duffee, Edward, assignor.)			
54,364	Kimball, Hiram, and Andrew J. Laurence	Philadelphia, Pa	Legs, artificial	May 1, 1866.
55,671	Kimball, John	Boston, Mass.	Boots and shoes	June 19, 1866.
	Kimball, William W. (*See* Ingalls, William A., assignor.)			
	Kimbark, D., jr. (*See* Prosser, T. T., assignor.)			
	Kimbark, D. A., *et al.* (*See* Prosser, T. T., assignor.)			
53,535	Kincaid, Robert D., assignor to self and Hall & Speer	Pittsburg, Pa.	Tuyeres	Mar. 27, 1866.
56,572	Kindleberger, T. J.	Eaton, Ohio	Water wheels	July 24, 1866.
2,332	Kindleberger, Tobias J.	....do.	Mills, cider (Reissue)	Aug. 14, 1866.
53,452	King, Abraham B.	Seven Mile, Ohio	Broom head	Mar. 27, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,649	King, Abraham B.	Camden, Ohio	Feed cutter and box	Oct. 9, 1866.
57,822	King, Armon, assignor to self and John H. Chapman	Utica, N. Y.	Moulding	Sept. 4, 1866.
	King, David. (*See* White, James M., assignor.)			
51,839	King, Francis L.	Worcester, Mass.	Egg beater	Jan. 2, 1866.
59,036	King, George E.	New York, N. Y.	Bosoms, shirt, fluted puffing for	Oct. 23, 1866.
58,650	King, George L.	Philadelphia, Pa.	Wells, oil, driving pipe for	Oct. 9, 1866.
55,672	King, Jacob	Omaha, N. T.	Rakes, horse	June 19, 1866.
55,117	King, Jacob, jr.	Fort Wayne, Ind.	Seales, bent-lever	May 29, 1866.
59,844	Same	....do.	Fish hooks, spring	Nov. 20, 1866.
56,233	King, John	Ansonia, Conn.	Oilers	July 10, 1866.
	King, Joseph C., and Wm. M. Lanehart. (*See* Lanehart & King.)			
52,858	King, L.	East Cleveland, Ohio	Water drawer	Feb. 27, 1866.
55,012	King, Nelson, assignor to O. F. Winchester	Bridgeport, Conn.	Fire-arms magazine	May 22, 1866.
57,636	Same	....do.	Fire-arms magazine	Aug. 28, 1866.
	King, Obed and Ezra, and Stephen C. Mendenhall. (*See* Mendenhall & King.) Extension.			
60,013	King, Robert, assignor to T. Prosser & Son	Brooklyn, N. Y.	Boiler-flue brushes	Nov. 27, 1866.
	King, R. D., *et al.* (*See* Baker, Holmes & King.)			
56,762	King, Samuel M.	Lancaster, Pa.	Bridle bit	July 31, 1866.
55,874	King, Theodore E.	Painesville, Ohio	Fence	June 26, 1866.
53,305	King, W. R.	United States Army	Drill, rock	Mar. 20, 1866.
60,196	King, Wendell R.	Chicago, Ill.	Press, baling. (Antedated August 28, 1866)	Dec. 4, 1866.
	King, W. S., and W. C. Dodge. (*See* Dodge & Smith, assignors.)			
58,266	King, Zenas	Cleveland, Ohio	Bridges	Sept. 25, 1866.
54,365	Kingman, John W.	North Bridgewater, Mass.	Paint to surfaces, method of applying. (Antedated April 19,'66)	May 1, 1866.
57,732	Kingsbury, John	Ravenna, Ohio	Car coupling	Sept. 4, 1866.
52,859	Kingsland, James S.	Stryker, Ohio	Car wheels	Feb. 27, 1866.
	Kingsley, A., *et al.* (*See* Holford, E. R., assignor.)			
57,924	Kingsley, E. N.	Minneapolis, Minn.	Beehives	Sept. 11, 1866.
53,629	Kingsley, N. W.	New York, N. Y.	Blowpipes	Apr. 3, 1866.
57,637	Kinkel, Charles, assignor to Charles Wehle	....do.	Steam generators	Aug. 28, 1866.
55,773	Kinkel, Charles, and Martin Hubbe, assignors to Charles Wehle	....do.	Ships, steam, propeller for	June 19, 1866.
	Kinne, Charles W. (*See* Osgood, R. F., assignor.)			
	Same.			
59,037	Kinney, A. P.	South Carver, Mass	Spindle step	Oct. 23, 1866.
59,845	Kinney, Daniel	Loami, Ill.	Compound for the cure of foot-rot in sheep	Nov. 20, 1866.
56,954	Kinney, Horace B.	Leonardsville, N. Y.	Forks, machinery for making	July 3, 1866.
54,360	Kinsley, Edgar L.	Cambridge, Mass.	Hammers, steam	May 8, 1866.
57,923	Kinzer, David	Sardinia, Ohio	Evaporator	Sept. 11, 1866.
54,740	Kinzer, Jacob	Pittsburg, Pa.	Mills, coffee, spice, and other small, handle for	May 15, 1866.
57,335	Same	....do.	Skates	Aug. 21, 1866.
	Kirby, William A. (*See* Osborne, David M., assignor.)			
53,306	Kirk, E. Clarence	Baltimore, Md.	Locks, gun	Mar. 20, 1866.
55,774	Kirk, James, assignor to R. Hoe & Co.	Dover, Del.	Printing presses, registering apparatus for	June 19, 1866.
60,386	Kirk, P. C., and M. Pendergast	Lawrence, Mass.	Carding engines, wool, oiling apparatus for	Dec. 11, 1866.

53,307	Kirk, Solomon W	Coatesville, Pa	Steel, manufacture of	Mar. 20, 1866.
57,518	Kirk, William A. L	Hamilton, Ohio	Engine, steam, valves	Aug. 28, 1866.
59,130	Kirk, William A. L., assignor to Owens, Lane, Dyer & Co	do	Grates, water	Oct. 23, 1866.
56,763	Kirkland, William P	San Francisco, Cal	Bilge-water gauge	July 31, 1866.
59,409	Kirkman, D. J., and E. K. Gray	Winchester, Ill	Wheels, tightening the tires of	Nov. 6, 1866.
	Kirkman, John, and Ansel Haines. (*See* Haines & Kirkman.)			
51,897	Kirkup, Lancelot, assignor to self, Francis D. Taylor, and Chas. A. Scott.	Brooklyn, N. Y	Spikes	Jan. 2, 1866.
52,494	Kirkup, Lancelot, assignor through mesne assignments to the American Bolt and Rivet Company.	do	Bolt-heading machine	Feb. 6, 1866.
58,433	Kirkwood, John F	Thistle, Md	Looms, let-off and take-up for	Oct. 2, 1866.
55,313	Kirlin, A	Rock Island, Ill	Churn dashers	June 5, 1866.
55,969	Kirrage, William	England	Stone, artificial, manufacture of	June 26, 1866.
	Kitson, G. L., and Edward E. Jones. (*See* Jones & Kitson.)			
55,118	Kitson, Richard	Lowell, Mass	Cotton, &c., picker houses for opening and cleaning	May 11, 1866.
60,387	Same	do	Cotton, machine for opening and cleaning	Dec. 11, 1866.
	Kitson, Richard. (*See* Hussey, Daniel, assignor.)			
56,573	Klamke, Julius	New York, N. Y	Robes	July 24, 1866.
56,574	Klander, Rudolph H	Philadelphia, Pa	Fabrics, faded, renovating	July 24, 1866.
	Klaucke, Alex. A. C., and Frederick C. Beach. (*See* Beach & Klaucke.)			
55,775	Klee, Frederick, assignor to Louis Klee	Williamsburg, N. Y	Irritating the skin, instrument for	June 19, 1866.
2,528	Klein, C. C., assignor to Thomas Wood	Philadelphia, Pa	Shafting hanger	Dec. 11, 1866.
52,173	Kleinschmidt, Albert, and Francis Schlater	do	Lighters, tools for making	Jan. 23, 1866.
57,153	Kline, John, and Anton Schmacker	Cincinnati, Ohio	Chair, reclining	Aug. 14, 1866.
55,674	Kloman, Andrew	Pittsburg, Pa	Presses, upsetting	June 19, 1866.
	Knabe, William, & Co. (*See* Nordhoff, William, assignor.)			
55,119	Knapp, A. H	Coxsackie, N. Y	Horseshoes, attaching soles to	May 29, 1866.
	Knapp, A. P., *et al.* (*See* Sargent, Sumner, assignor.) Reissue.			
55,120	Knapp, David J	Fallsburg, N. Y	Churn power	May 29, 1866.
54,561	Knapp, Henry F	New York, N. Y	Collars, paper, machines for making	May 8, 1866.
59,410	Same	do	Collars, paper, machine	Nov. 6, 1866.
56,764	Knauer, Christopher F., and William Warwick	Pittsburg, Pa	Iron, sad	July 31, 1866.
53,630	Kneeland, Elisha Y	Buffalo, N. Y	Pumps, deep-well, pistons for	Apr. 3, 1866.
54,366	Kneeland, T. T	Tecumseh, Mich	Sorghum evaporator	May 1, 1866.
54,174	Kniffin, George G	Long Island City, N. Y	Iron, sad	Apr. 24, 1866.
53,631	Knight, Edward H	Washington, D. C	Paper pulp, process for moulding articles from	Apr. 3, 1866.
54,367	Same	do	Sewing-machine guides	May 1, 1866.
59,411	Same	do	Governors	Nov. 6, 1866.
59,412	Same	do	Governors	Nov. 6, 1866.
59,413	Same	do	Governors	Nov. 6, 1866.
60,197	Knight, Edward H., assignor to Ignatius Rice	do	Combs	Dec. 4, 1866.
	Knight. Edward H., and M. C. C. Church. (*See* Church & Knight.)			
59,232	Knight, George	Boone, Iowa	Plough, sulky	Oct. 30, 1866.
54,252	Knight, G. H., and F. Millward, assignors to George H. Knight	Cincinnati, Ohio	Sirup, fountain	Apr. 24, 1866.
60,014	Knight, Henry	Brooklyn, N. Y	Pipes cement	Nov. 27, 1866.
2,477	Knight, John H., and Joseph P. Farrand	Detroit, Mich	Cigar and tobacco safe (Design)	Oct. 2, 1866.
53,739	Knight, Luke L., assignor to J. E. Taylor	Barre, Mass	Hay spreaders	Apr. 3, 1866.
	Knight, Robert	Cleveland, Ohio	Bevelling the edges of skelps or metallic strips, &c., machinery for. (Extension.)	Sept. 20, 1866.
59,414	Knight, Robert T	Philadelphia, Pa	Spring for closing doors	Nov. 6, 1866.
53,632	Knight, William W	do	Buckets, chamber. (Antedated March 23, 1866)	Apr. 3, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,741	Knoepke, Johann Christian	Philadelphia, Pa	Basin, wash	May 15, 1866.
	Knoepke, Johann C., and Charles F. Stilz. (*See* Stilz & Knoepke.)			
53,308	Knowles, Lucius J	Warren, Mass	Motion, rotary, intermitteut, mechanism for obtaining	Mar. 20, 1866.
54,742	Same	....do	Looms for weaving tapes, ribbons, &c	May 15, 1866.
59,613	Same	....do	Looms, narrow-ware	Nov. 13, 1866.
60,388	Same	....do	Looms, narrow-ware	Dec. 11, 1866.
54,253	Knowles, Wilson W., assignor to self, Julius B. Savage, and Willis B. Smith.	Southington, Conn	Carriage shackle	Apr. 24, 1866.
53,836	Knowlton, Dallas	Liberty, Maine	Tree protectors	Apr. 10, 1866.
55,673	Knowlton, David	Camden, Maine	Capstan, winch	June 19, 1866.
54,368	Knowlton, E. J	South Lyon, Mich	Roller, land	May 1, 1866.
54,369	Knowlton, George A	Natick, Mass	Pegging jacks	May 1, 1866.
59,233	Knox, Angelina J	Boston, Mass	Wash bowls and water closets, combined	Oct. 30, 1866.
60,198	Knox, John	Auburn, N. Y	Boot and shoe irons	Dec. 4, 1866.
	Knox, J. B. (*See* Stoddard, J. C., assignor.)			
53,633	Knox, Susan, and W. D. Corrister	New York, N. Y	Fluting machine	Apr. 3, 1866.
59,913	Knox, Susan R	....do	Fluting machine	Nov. 20, 1866.
55,675	Knudsen, R., and W. T. Lassoe	Brooklyn, N. Y	Boat, portable	June 19, 1866.
60,015	Knupp, J., and H. S. Elliott	New Prospect, Ohio	Shed, sheep	Nov. 27, 1866.
	Koch, Philippe. (*See* Bristol, Charles B., assignor.)			
53,309	Koehler, Joseph	New York, N. Y	Presses, lithographic, bed for	Mar. 20, 1866.
57,336	Koeller, H	Camp Point, Ill	Spinning machine, hand	Aug. 21, 1866.
53,226	Kohly, Henry, jr., assignor to self and J. Curtis	Potosi, Mo	Evaporator and cooler	Mar. 13, 1866.
54,175	Kohn, Theodore A	New York, N. Y	Clock, musical	Apr. 24, 1866.
58,434	Kohn, Tobias	Hartford, Conn	Silk and other threads, machine for twisting, stretching, cleaning, and reeling.	Oct. 2, 1866.
	Kolbecker, Peter. (*See* Gissingers, Samuel, assignor.)			
54,923	Kollenberg, August	Owensboro', Ky	Cans, fruit, tin, machine for making	May 29, 1866.
56,575	Konvelinka, Joseph G	Astoria, N. Y	Watch and locket cases	July 24, 1866.
52,508	Koons, Even	Funkstown, Md	Tuyere	Feb. 6, 1866.
60,389	Kopp, John	Bridgeport, Conn	Chair and table, baby	Dec. 11, 1866.
58,035	Köttgen, Gustav	Prussia	Pockets, seamless	Sept. 11, 1866.
59,234	Kraemer, William	Cincinnati, Ohio	Buttons, machine for making	Oct. 30, 1866.
54,370	Kramer, Elias	Alvira, Pa	Harvesters, clover	May 1, 1866.
	Krasinski, Anton, and Louis Postawka. (*See* Postawka & Krasinski.)			
55,875	Kratzer, Louis	Baltimore, Md	Water wheels	June 26, 1866.
52,007	Kraus, Leopold, and Alexander Szigethy	Hungary	Cigarette machine	Jan. 9, 1866.
58,838	Kraut, Henry	St. Louis, Mo	Measures, adjustable	Oct. 16, 1866.
	Krayer, F., *et al.* (*See* Schrick & Hildenbrand, assignors.)			
	Same.			
	Kreckel, Edward, and Michael Haberbush. (*See* Haberbush & Kreckel.)			
52,860	Kremser, Martin	Cleveland, Ohio	Bridges	Feb. 27, 1866.
59,614	Kretchmer, Edward	Pleasant Grove, Iowa	Beehives	Nov. 13, 1866.

	Kretsinger, William H. (*See* Myers, David, assignor.)			
54,562	Kriegbaum, John	Milton, Ohio	Tuyeres	May 8, 1866.
	Krietz, J. William. (*See* Baer, Charles, assignor.)			
55,419	Kroeger, Werner, assignor to self and Constantine Ries	Milwaukee, Wis	Stove-pipe drum	June 5, 1866.
58,839	Krom, Stephen R	New York, N. Y	Metals from ores, apparatus for separating	Oct. 16, 1866.
59,509	Krom, Stephen R., assignor to L. F. Therasson, J. A. Bryan, J. M. Blackwell, and A. R. Wetmore.	do	Metals from ores, apparatus for separating	Nov. 6, 1866.
59,510	Same	do	Metals from ores, apparatus for separating	Nov. 6, 1866.
59,773	Krom, Stephen R., assignor to Apollos R. Wetmore	do	Metals from ores, apparatus for separating	Nov. 20, 1866.
59,914	Kromer, Otto, and Charles Ohlemacher	Sandusky, Ohio	Belt clasp	Nov. 20, 1866.
54,372	Krum, E. M	Nassau, N. Y	Harvesters	May 1, 1866.
54,176	Krum, William B	Troy, Pa	Yokes, ox	Apr. 24, 1866.
55,957	Kubach, C. D., assignor to self and W. W. Clary	Philadelphia, Pa	Alarm, fire	June 26, 1866.
57,520	Kugler, Charles	Cadiz, Ohio	Rakes, horse	Aug. 28, 1866.
56,955	Kuhlmann, Adolph F	Glen Haven, Wis	Washing machine	Aug. 7, 1866.
56,576	Kumber, Noah W	Dayton, Ohio	Wax, sealing, from adhering to moulds, method of preventing	July 24, 1866.
52,055	Kump, George	Xenia, Ohio	Pincers, lasting	Jan. 16, 1866.
57,925	Kums, T. F., and W. W. Burson	Roekford, Ill	Cars, street, method of starting	Sept. 11, 1866.
59,235	Kunkel, Daniel	Oregon, Mo	Washing machine	Oct. 30, 1866.
55,013	Kunsman, Jacob, sr., assignor to self and Frederick J. Nagle	Reading, Pa	Bodies, dead, apparatus for preserving	May 22, 1866.
53,453	Kunz, Joseph	Bay City, Mich	Sawing machine	Mar. 27, 1866.
60,016	Kutscher, Louis	New York, N. Y	Carriages	Nov. 27, 1866.
55,502	Kyle, Augustus G. and E. E	Newville, Pa	Preserving eggs, method of	June 12, 1866.
57,733	Lacey, D. P., and J. A. Bartlett	Oxfordville, Wis	Lock, sash	Sept. 4, 1866.
53,837	Lacey, John	Chicago, Ill	Cultivators	Apr. 10, 1866.
	Lacey, Meeker & Co. (*See* Meeker, George H., assignor.) Reissue.			
58,172	Lacy, Daniel B., assignor to self, Isaac A. and Thomas T. Lacy	Mott Haven, N. Y	Weights	Sept. 18, 1866.
57,734	Ladd, Alexander	St. Lawrence, N. Y	Planters, corn	Sept. 4, 1866.
59,236	Ladd, Henry H	Worcester, Vt	Racks, sheep	Oct. 30, 1866.
54,647	La Dew, William, assignor to self and Horace W. Soper	Norway, N. Y	Tanning, arranging vats for	May 8, 1866.
	Lafferty, R. M., and J. Taylor. (*See* Taylor & Lafferty.)			
58,107	Laflin, Parley	Warren, Mass	Oilers	Sept. 18, 1866.
56,065	La France, Peter A	Elmira, N. Y	Horseshoes	July 3, 1866.
57,926	La France, Peter A., and J. D. Dinsmore	do	Cars, railway, head rest for	Sept. 11, 1866.
56,956	La France, T. S	do	Engine, steam, governors	Aug. 7, 1866.
54,268	Lagoguey, A. D	France	Mill stones, mode of ventilating	Apr. 24, 1866.
54,563	Lahaye, John J	Reading, Pa	Axle-box, railroad	May 8, 1866.
54,371	Lahm, S	Canton, Ohio	Racks, sheep	May 1, 1866.
55,676	Laidley, Theodore T. S	Springfield, Mass	Cartridges, metallic, priming	June 19, 1866.
54,743	Laidley, T. T. S., and C. A. Emery	United States army, Springfield, Mass	Fire-arm, breech-loading	May 15, 1866.
57,337	Laird, Andrew J	Middletown, Pa	Hayforks, horse	Aug. 21, 1866.
53,009	Laird, John P	Altoona, Pa	Locomotive axles, bearing of	Mar. 6, 1866.
53,010	Laird, Peter B	West Danville, Vt	Steel, composition for welding and refining	Mar. 6, 1866.
	Lake, Bearder & Co. (*See* Martino, Beasley & Currie, assignors.) Design.			
53,310	Lake, David	Smith's Landing, N. J	Traps, fly	Mar. 20, 1866.
	Lake, Elizabeth A. (*See* Hyatt, Thaddeus, assignor.)			
57,338	Lake, Ezra B	Bridgeport, N. J	Traps, bedbug	Aug. 21, 1866.
	Lake, Jesse S. and David	Smith's Landing, N. J	Harvesters, grass (Disclaimer)	July 18, 1866.
	Same	do	Harvesters, grass (Disclaimer)	July 18, 1866.
	Same	do	Harvesters, grass (Disclaimer)	July 18, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Lake, Jesse L. and David	Smith's Landing, N. J	Harvesters, grass (Extension)	July 19, 1866.
	Same	do	Harvesters, grass (Extension)	July 19, 1866.
	Same	do	Harvesters, grass (Extension)	July 19, 1866.
	Same	do	Harvesters, grass (Extension)	July 19, 1866.
55,503	Lake, Jesse S., and Ezra B	South Landing, N. J Bridgeport, N. J	Scales, weighing	June 12, 1866.
54,924	Lakin, Leonard, and Norman Hall	Brodhead, Wis	Stove, heating	May 22, 1866.
57,521	Lakin, Taylor D	Hancock, N. H	Cutlery, handle for	Aug. 28, 1866.
52,295	Lakin, William H. and John S	Lander, Md	Sowers, fertilizer	Jan. 30, 1866.
60,017	Lall, Leopold	New York, N. Y	Books, &c., clasp-lock for	Nov. 27, 1866.
59,915	Lallement, Pierre, assignor to self and James Carroll	France	Velocipedes	Nov. 20, 1866.
52,421	Lamb, Alford	Skaneateles, N. Y	Cultivators	Feb. 6, 1866.
53,634	Lamb, Casper W	Columbia City, Ind	Rack, feed, portable	Apr. 3, 1866.
52,576	Lamb, Isaac W	Rochester, N. Y	Dish stand	Feb. 13, 1866.
59,038	Lamb, John	Jeffersonville, N. Y	Washing and wringing machine	Oct. 23, 1866.
55,420	Lamb, M. T., assignor to self and Isaac W. Lamb	Valparaiso, Ind	Knitting machines	June 5, 1866.
55,504	Lamb, P. W	Albany, N. Y	Casting, apparatus for moulding	June 12, 1866.
58,840	Lamb, Thomas C	Chicago, Ill	Paint	Oct. 16, 1866.
52,296	Lamberson, William A., and Thomas O. Morton	New York, N. Y	Curtain fixture	Jan. 30, 1866.
2,478	Lambert, Catholina	do	Reel (Design)	Oct. 2, 1866.
2,490	Same	do	Drapery trimming (Design)	Oct. 9, 1866.
53,838	Lambert, Richard	Cortland Village, N. Y	Planters, corn, hand	Apr. 10, 1866.
	Lambert, Richard. (*See* Casey, James E., assignor.)			
57,254	La Ment, P. A., assignor to herself and Eliza La Ment	New York, N. Y	Dresses, apparatus for measuring and fitting	Aug. 14, 1866.
56,765	Lamm, Emile	New Orleans, La	Dentists, method of preparing gold for	July 31, 1866.
58,357	Lamontagne, F. A	Montreal, C. E	Card case	Sept. 25, 1866.
59,149	Lamotte, Henri	England	Alcohol, apparatus for rectifying	Oct. 23, 1866.
60,636	Lampert, Henry	Nunda, N. Y	Hides, apparatus for scraping	Dec. 18, 1866.
60,018	Lamphear, Jonas	Panama, N. Y	Washing machine	Nov. 27, 1866.
58,267	Lamplugh, Isaac	Springfield, Ill	Shearing apparatus	Sept. 25, 1866.
60,525	Lampman, Edwin	Catskill, N. Y	Table, centre	Dec. 18, 1866.
51,840	Lampson, Daniel	Beaver Dam, Wis	Washing machine	Jan. 2, 1866.
	Lampson, Goodnow, Manufacturing Company. (*See* Gardner, J. W., assignor.)			
52,056	Lamson, Ebenezer G	Windsor, Vt	Augers	Jan. 16, 1866.
58,435	Same	Shelburne Falls, Mass	Drilling and quarrying stone, &c	Oct. 2, 1866.
58,841	Lamson, Ralph G	Brownsville, Vt	Rakes, hay	Oct. 16, 1866.
52,175	Lancaster, I	Baltimore, Md	Grain binder	Jan. 23, 1866.
54,177	Lancaster, Israel	do	Grain binder	Apr. 24, 1866.
55,677	Lance, William L	Plymouth, Pa	Table, serving	June 19, 1866.
2,147	Lancelott, James, assignor to Sackett, Davis & Co	Providence, R. I	Chains, ornamental	Jan. 16, 1866.
	Lancey, Dustin. (*See* Marden, Samuel, assignor.)			
	Land, Abel. (*See* Johnson & Singer, assignors.)			
	Land, Abel. (*See* Singer, C. W., assignor.)			
54,178	Landbeck, W. H	Rochester, N. Y	Wrenches	Apr. 24, 1866

53,080	Landfear, William R., assignor to self and David Whittemore	Hartford, Conn	Eyelet machine. (Antedated October 9, 1865)	Mar. 6, 1866.
55,421	Same	do	Eyelets, making	June 5, 1866.
2,331	Landfear, William R., assignor to D. Whittemore	North Bridgewater, Mass	Pegging jack (Reissue)	Aug. 7, 1866.
58,108	Landis, Abraham	Colesburg, Iowa	Wood, rack for hauling	Sept. 18, 1866.
	Landis, H. D., and W. R. Jenkins, jr. (*See* Jenkins & Landis.)			
52,577	Landis, Jacob F	Harrisburg, Pa	Curtains, blinds, and maps, mode of hanging	Feb. 13, 1866.
60,526	Landis, Simon M	Philadelphia, Pa	Syringes, female	Dec. 18, 1866.
55,121	Landry, Norbert	San Francisco, Cal	Coin holder	May 29, 1866.
2,186	Lane, Dennis	Montpelier, Vt	Saw mills, head-blocks for (Reissue)	Mar. 6, 1866.
59,846	Same	do	Saw mills	Nov. 20, 1866.
58,842	Lane, George W., and J. N. Bolles	Baltimore, Md	Vessels, sunken, means for raising	Oct. 16, 1866.
58,946	Lane, J. G., assignor to self and W. J. Lane	Washington, N. Y	Mills, coffee	Oct. 16, 1866.
53,635	Lane, James N	Bethel, Ky	Planters, seed	Apr. 3, 1866.
2,322	Lane, John W	Newton, N. Y	Stoves, heating (Reissue)	July 24, 1866.
52,422	Lane, Thomas A	Cincinnati, Ohio	Wheels and axles	Feb. 6, 1866.
59,039	Lanehart, William M., and Joseph C. King	Cookstown, Pa	Sand and other mineral substances, machine for washing	Oct. 23, 1866.
53,991	Lang, Charles	Bergen, N. J	Paper, lace, manufacture of	Apr. 17, 1866.
57,154	Same	New York, N. Y	Collars, imitation, ladies'	Aug. 14, 1866.
58,728	Lang, E. M., assignor to self and Isaiah Gilman	Portland, Maine	Solder casting machine	Oct. 9, 1866.
54,373	Langdon, Samuel W	Jefferson county, Iowa	Scraper, barn-yard	May 1, 1866.
55,314	Langdon, William	Langdon's Station, Pa	Stump extractors	June 5, 1866.
	Langdon, W. G., *et al.* (*See* Gray, Joshua, assignor.) Reissue.			
	Langdon, W. G., *et al.* (*See* Gray, Joshua, assignor.)			
54,831	Lange, F. A	Saxony	Watches	May 15, 1866.
57,266	Same	do	Watches, repeating	Aug. 14, 1866.
53,013	Langham, Thomas	Philadelphia, Pa	Knitting machine	Mar. 16, 1866.
58,550	Langmaid, Charles E., assignor to self and George A. Langmaid	Woburn, Mass	Sewing machines, waxed thread cast-off of	Oct. 2, 1866.
	Langstroth, Lorenzo L	Oxford, Ohio	Beehives (Extension)	Oct. 4, 1866.
54,564	Lannay Louis F., and / William F. Parks	Indianapolis, Ind / Baltimore, Md	Bristles, machine for combing	May 9, 1866.
55,678	Lamphear, S. E., and H. H. Blair	Brunswick, Ohio	Bed bottom	June 19, 1866.
52,721	Lansdell, Henry S	New York, N. Y	Pumps for railroad stations	Feb. 20, 1866.
52,861	Lansing, Henry B.	Hudson, Mich	Planter, corn	Feb. 27, 1866.
	Lansingh and Osborne. (*See* Hyatt, Charles M., assignor.)			
53,454	Lansweert, Louis	San Francisco, Cal	Match compound	Mar. 27, 1866.
52,298	Lanterman, A. P., and B. F	Prairie City, Ill	Engines, steam, governors for	Jan. 30, 1866.
55,679	Lanza, John	New York, N. Y	Characters, metallic, on paper, &c., forming	June 19, 1866.
60,199	Lape, George T	Summit, N. Y	Bridges, vaults, &c., cast-iron arches for	Dec. 4, 1866.
59,317	Lapham, Allen, assignor to self and Job Johnson	Brooklyn, N. Y	Petroleum, stills for	Oct. 30, 1866.
55,680	Lapham, Rufus	New York, N. Y	Bedstead, spring	June 19, 1866.
59,799	Same	do	Bed bottoms, spring-holders for	Nov. 20, 1866.
59,415	Large, A. T	Tomah, Wis	Pockets, safety. (Antedated October 27, 1866)	Nov. 6, 1866.
60,019	Same	do	Planter, seed, hand. (Antedated November 17, 1866)	Nov. 27, 1866.
	Larimore, J. W., and J. H. Wilhelm. (*See* Wilhelm & Larimore.)			
	Larkin, J., *et al.* (*See* Taylor, Crandall, & Larkin.)			
	Larkins, W., and P. H. Ferl. (*See* Ferl & Larkins.)			
56,766	Larmore, John W	Harrison, Ohio	Fences, field	July 31, 1866.
59,416	Larrowe, A	Cohocton, N. Y	Gates	Nov. 6, 1866.
60,527	Same	do	Gates, farm	Dec. 18, 1866.
52,578	Larsh, Leroy M	Richmond, Ind	Water wheels	Feb. 13, 1866.
53,311	Lash, John S	Philadelphia, Pa	Washing machine	Mar. 20, 1866.
56,957	Same	do	Ladder, step	Aug. 7, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,041	Lash, John S	Philadelphia, Pa	Clothes wringer	Oct. 23, 1866.
	Lassoe, W. T., and R. Knudsen. (*See* Knudsen & Lassoe.)			
55,505	Last, Henry	West Lebanon, Ind	Hinges, gate	June 13, 1866.
54,925	Lateher, John W	Albany, N. Y.	Car wheels, for lubricating purposes. (Antedated May 7, 1866)	May 22, 1866.
56,958	Same	do	Car wheels, centre chill for. (Antedated July 24, 1866)	Aug. 7, 1866.
57,339	Latham, F. J	New York, N. Y	Anchor	Aug. 21, 1866.
55,506	Latham, Obadiah B	Seneca Falls, N. Y	Rope guard	June 12, 1866.
56,234	Same	do	Well, oil, tubes	July 10, 1866.
	Lathrope Sewing Machine Company. (*See* Bond, Joseph, jr., assignor.) Design.			
	Same. (Design.)			
	Lathrope, W. C., and John Burnham. (*See* Burnham & Lathrope.)			
60,200	Latimer, John H	Crystal Lake, Ill	Planter, seed	Dec. 4, 1866.
55,122	Latta, Finley	Cincinnati, Ohio	Engines, steam	May 29, 1866.
57,340	Latta, M. M	Goshen, Ind	Fracture beds	Aug. 21, 1866.
56,422	Latta, Samuel L	Ligonier, Ind	Shelves, store, adjustable	July 17, 1866.
60,528	Latting, R. G	New Orleans, La	Bale, cotton, ties	Dec. 18, 1866.
53,992	Laubach, Isaac S	New York, N. Y	Drill and crane attachment	April 17, 1866.
60,201	Lauer, John E	do	Yeast, for baking purposes, substitute for	Dec. 4, 1866.
	Laurent, J. B. B. C., and Emile Peugent. (*See* Peugent & Laurent.)			
59,847	Laurent, James R	Milford, Pa	Fires, extinguishing	Nov. 20, 1866.
52,297	Lautenschlager, Gustave, and George L. Gott	New York, N. Y	Tobacco pipe. (Antedated January 17, 1866)	Jan. 30, 1866.
57,927	Lauter, George, and Jacob Kautz	Vincennes, Ind	Table, extension	Sept. 11, 1866.
55,585	Lauterbach, Friederich H., assignor to self and Newman S. Wax	Boston, Mass	Jars, fruit	June 12, 1866.
53,012	Lauth, John F	Reading, Pa	Iron, machinery for rolling	Mar. 6, 1866.
59,417	Laveerec, Stephen	Alton, Ill	Hubs for wagons, machinery for boring	Nov. 6, 1866.
54,374	Lavey, Hiram R	Bristol, Wis	Reaping and mowing machines	May 1, 1866.
	Law, Samuel G. (*See* Simmonds, Joseph, assignor.)			
56,423	Law, Theodore C	Green Island, N. Y	Stove hook, hammer, &c., combined	July 17, 1866.
57,729	Lawler, P. H., assignor to self and D. W. Roche	Rochester, N. Y.	Barrel machine	Oct. 9, 1866.
59,418	Lawrence, Albert R	Saratoga Springs, N. Y	Mineral water, preventing sediment in	Nov. 6, 1866.
52,789	Lawrence, Alvin, assignor to self, Ambrose Lawrence, and John E. Crane.	Lowell, Mass	Engine, steam, governors	Feb. 20, 1866.
53,227	Same	do	Pie or plate tongs	Mar. 13, 1866.
	Lawrence, Andrew J., and Hiram A. Kimball. (*See* Kimball & Lawrence.)			
54,179	Lawrence, Joseph C	Brooklyn, N. Y	Brush	April 24, 1866.
56,577	Lawrence, Perley H	Springfield, Mass	Drilling machine, rock	July 24, 1866.
57,928	Lawrence, R. Walcot	New York, N. Y	Waiter, dumb	Sept. 11, 1866.
59,615	Lawshé, Er	Atlanta, Ga	Locks	Nov. 13, 1866.
	Lawson, James, and T. T. Prosser. (*See* Prosser & Lawson.)			
2,304	Lawson, James A	Troy, N. Y	Stoves, ash-pan drawer for	July 10, 1866.
58,843	Lawther, Alfred B., and George F. Letz	Chicago, Ill	Water meters and motors	Oct. 16, 1866
	Layman, William J. (*See* Pomeroy, Thomas W., assignor.)			

55,315	Layng, Robert	New York, N. Y	Pipes, lead, machine for pressing	June 5, 1866.
	Layton, John M. (*See* Auld, James E., assignor.)			
60,020	Lazear, Cornelius G	Norwalk, Ohio	Fence	Nov. 27, 1866.
	Lazzaro, Angelo, and Louis De l'Homme. (*See* De l'Homme & Lazzaro.)			
59,774	Leach, Albert	Lynn, Mass	Leather, cement for	Nov. 20, 1866.
54,565	Leach, Henry Bedell	Boston, Mass	Pumps, rotary	May 8, 1866.
57,522	Leach, Joseph D	Penobscot, Maine	Casks, machines for holding the heads of	Aug. 28, 1866.
	Leach, Thomas, and Eli H. Eldridge. (*See* Eldridge & Leach.)			
60,202	Leach, William and Joseph	Stewartsville, Ind.	Spinning machines, hand	Dec. 4, 1866.
52,177	Lear, Peter	Medford, Mass	Chimney cap or conical ventilator	Jan. 23, 1866.
54,180	Learned, Charles	Indianapolis, Ind	Lath, machines for cutting	April 24, 1866.
51,949	Leas, Worley	Kokoma, Ind	Dough, apparatus for raising	Jan. 9, 1866.
52,178	Same	....do	Belt coupling	Jan. 23, 1866.
56,767	Same	....do	Belt coupling	July 31, 1866.
60,203	Leasure, Henry J., and James S. Gill	Wheeling, West Va	Glass, press, cooling	Dec. 4, 1866.
54,926	Leavens, William M	Philadelphia, Pa	Sewing machines	May 22, 1866.
	Leavitt, Crane & Co. (*See* Crane, L. L., assignor.)			
52,179	Leavitt, Rufus	Melrose, Mass	Eyelets	Jan. 23, 1866.
53,011	Leavitt, T. H	Boston, Mass	Peat machine	Mar. 6, 1866.
53,014	Same	....do	Peat machine, material for dusting the moulds of	Mar. 6, 1866.
56,235	Lebean, Jacob	Cincinnati, Ohio	Paring knives	July 10, 1866.
51,905	Le Boulengé, Paul, assignor to Fritz Meert	Belgium	Chronographs, electro-ballistic	Jan. 2, 1866.
55,441	Leelanche, George Lionel	France	Galvanic batteries	June 5, 1866.
55,681	Le Count, Charles W	Norwalk, Conn	Mandrels, adjustable	June 19, 1866.
59,237	Same	....do	Lampwicks	Oct. 30, 1866.
52,862	Le Count, C. W., and Samuel Chard	....do	Lampwicks	Feb. 27, 1866.
52,579	Ledig, Rudolph	Newark, N. J.	Levels, spirit	Feb. 13, 1866.
58,109	Le Due, Henry M	Washington, D. C	Journal box, anti-friction	Sept. 18, 1866.
57,735	Lee, Charles	Sandy, Ohio	Fence	Sept. 4, 1866.
53,455	Lee, Charles M	Springfield, Mass	Shirt bosoms, paper	Mar. 27, 1866.
	Lee, Horace M. (*See* Gladwin, Porter A., assignor.)			
54,744	Lee, James	Milwaukee, Wis	Fire-arms, breech-loading	May 15, 1866.
60,204	Lee, James H	Charlestown, Mass	Pots, coffee. (Antedated November 22, 1866)	Dec. 4, 1866.
52,423	Lee, Joel	Galesburg, Ill.	Clothes wringer	Feb. 6, 1866.
55,876	Same	....do	Gates, farm	June 26, 1866.
60,390	Same	....do	Fire shield	Dec. 11, 1866.
55,507	Lee, John D	Trenton, N. J.	Composition for water-proofing	June 12, 1866.
57,929	Lee, L. L	Milwaukee, Wis	Water-guage float	Sept. 11, 1866.
57,930	Lee, Robert	Cincinnati, Ohio.	Latches, knob	Sept. 11, 1866.
	Lee, Thomas. (*See* McNulty, John C., assignor.)			
57,341	Lee, Z. W	Blakely, Ga	Ploughs	Aug. 21, 1866.
58,844	Same	....do	Bale, cotton, ties	Oct. 16, 1866.
55,682	Leech, Charles A	Philadelphia, Pa	Photographic apparatus	June 19, 1866.
52,180	Leeds, Josiah M., and Joseph E. Hallowell	Kokomo, Ind	Augers, post-hole	Jan. 23, 1866.
58,268	Leeds, Richmond A	Stamford, Conn	Fastening, gate	Sept. 25, 1866.
	Leet, C. D., *et al.* (*See* White, Luther C., assignor.) Reissue.			
57,736	Lefeber, James	Cambridge City, Ind	Spokes, machines for tenoning	Sept. 4, 1866.
58,436	Same	....do	Augers, hollow. (Antedated August 23, 1866)	Oct. 2, 1866.
56,145	Leffingwell, C , assignor to self, H. and F. J. L. Blandy	Clarksburg, Ohio	Saw-mills, head blocks for	July 3, 1866.
53,993	Leffler, G. R. H	Baltimore, Md	Moulds, chill, method of taking air off	April 17, 1866.
	Leffler, Joseph. (*See* Winchell, Joseph F., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Leggat, J. A. (*See* Munger, Wallace, T., assignor.)			
	Same. (Reissue.)			
	Same. (*See* Turner, Edward A., assignor.)			
	Leggett, T. C., and E. Petteys. (*See* Petteys & Leggett.)			
56,501	Lego, George B., assignor to David K. Brown	New Haven, Conn	Umbrellas	July 17, 1866.
52,057	Legran, Leonhard	Alleghany, Pa	Legs, artificial	Jan. 16, 1866.
58,845	Lehman, B. E.	Bethlehem, Pa	Cock, stop	Oct. 16, 1866.
56,683	Lehmann, Charles	Switzerland	Watches	July 24, 1866.
53,839	Lehmann, Theodore F	Alleghany, Pa	Alkali, waste, used in the manufacture of paper, method of recovering	April10, 1866.
52,580	Lehnert, Henry G	Boston, Mass	Bugles, horns, cornets, &c	Feb. 13, 1866.
	Leiber, Celestin, and William J. M. Batchelder. (*See* Batchelder & Leiber.)			
54,375	Leinweber, John	Louisville, Ky	Hemp or flax waste within a sliver of longer staple, machine for enveloping.	May 1, 1866.
56,578	Leippe, Martin	Lancaster, Pa.	Cigar press. (Antedated February 23, 1866)	July 24, 1866.
	Leisenning, H. G., and S. Greene. (*See* Hill & Greene, assignors.)			
	Leisenning, Henry G. (*See* Forbush, Walter H., assignor.)			
53,228	Leland, Amos, assignor to self and Alexander P. Colesberry	Philadelphia, Pa	Metal bands, machine for perforating	Mar. 13, 1866.
	Leland, E. A., and Henry Pennie. (*See* Pennie & Leland.)			
58,947	Leland, James E. F., assignor to H. A. Leland	New York, N. Y	Lathes, wood turning	Oct. 16, 1866.
	Leland, Windsor, and Samuel Davis. (*See* Davis & Leland.)			
2,173	Lelzelter, John Philip	Lancaster, Pa.	Wood-binding machines (Reissue)	Feb. 13, 1866.
2,325	Lemman, John	Cincinnati, Ohio	Hoisting apparatus (Reissue)	July 31, 1866.
58,437	Same	do	Bedstead fastening	Oct. 2, 1866.
60,021	Lenher, George H	Richmond, Va	Sewing-machine shuttle	Nov. 27, 1866.
60,391	Same	do	Churns. (Antedated November 30, 1866)	Dec. 11, 1866.
	Lennig and Clemm. (*See* Gottegetreu, R., assignor.)			
	Lent, H. L., and W. H. Hughes. (*See* Hughes & Lent.)			
55,511	Lentz, Charles	Philadelphia, Pa	Speculums	June 12, 1866.
55,508	Leonard, E. C	Binghamton, N. Y	Churns	June 12, 1866.
58,269	Leonard, John B. H., assignor to self, L. A. Belding, and J. D. Frary.	Meriden, Conn	Knives and forks, manufacture of	Sept. 25, 1866.
53,154	Leonard, Nathaniel and Nathaniel W	North Dighton, Mass	Tack and nail machines	Mar. 13, 1866.
56,959	Leonard, W., and J. J. Johnson	Alleghany, Pa	Compound, washing	Aug. 7, 1866.
	Leopold, Charles F., and Florence L. Veerkamp. (*See* Veerkamp & Leopold.)			
60,205	Leopold, O. G	Cincinnati, Ohio	Bridges	Dec. 4, 1866.
59,616	Leppens, F	Hartford, Conn	Axle box	Nov. 13, 1866.
52,299	Lesley, Alexander M, and William Craig	New York, N. Y Brooklyn, N. Y	Stoves, gas	Jan. 30, 1866.
52,300	Same	do	Stoves, gas	Jan. 30, 1866.
52,424	Lespés, T	New York, N. Y	Sugar, manufacture of	Feb. 6, 1866.
55,422	Lessels, John, assignor to Clark Tompkins	Troy, N. Y	Knitting machines, circular, take-up mechanism for	June 5, 1866.
59,617	Lesster, William C	New York, N. Y	Gasolier and cigar lighter, combined	Nov. 13, 1866.

	Lester, J. H., *et al.* (*See* Taggart, John, assignor.)			
	Same.			
52,301	Lester, John H	Brooklyn, N. Y	Oil for lubricating machinery, &c	Jan. 30, 1866.
2,422	Lester, John H., assignor to the Lester Oil Manufacturing Co	New York, N. Y	Composition of matter for lubricating machinery and for other purposes. (Reissue.)	Dec. 18, 1866.
	Lester, Robert J. (*See* Baker, Haydn M., assignor.)			
55,512	Letchworth, John	Philadelphia, Pa	Jar, fruit	June 12, 1866.
59,511	Letchworth, Josiah, assignor to Pratt & Letchworth	Buffalo, N. Y	Hook, snap	Nov. 6, 1866.
	Letchworth, J., and E. B. Forbush. (*See* Forbush & Letchworth.)			
59,419	Letson, Johnson	New Brunswick, N. J	Shoes, water-proof	Nov. 6, 1866.
59,420	Letteral, Joseph	Union, Ind	Spokes, machines for tenoning	Nov. 6, 1866.
	Letz, George F., and Alfred B. Lawther. (*See* Lawther & Letz.)			
55,513	Letzkus, John	Pittsburg, Pa	Squeezers	June 12 1866.
53,939	Leuchtweiss, A	Cincinnati, Ohio	Pumps	April 10 1866.
	Level, Leon. (*See* Brown, Samuel, assignor.)			
	Level, Leon, and Samuel Brown. (*See* Brown & Level.)			
	Same.			
60,529	Levering, William H	San Francisco, Cal	Cabinet, college	Dec. 18, 1866.
2,306	Levy, Isaac	New York, N. Y	Ace of spades (Design)	May 8, 1866.
57,155	Levy, Joseph	Chicago, Ill	Medicine	Aug. 14, 1866.
58,651	Levy, Judah	Philadelphia, Pa	Skirts, hoops for	Oct. 8, 1866.
	Levy, N., and Leopold Seeberger. (*See* Seeberger & Levy.)			
55,798	Lewine, Isaac, assignor to self and Margaret M. Piper	New York, N. Y	Button attachments for apparel	June 19, 1866.
57,156	Lewis, B. B	do	Hook, snap	Aug. 14, 1866.
	Lewis, B. B., *et. al.* (*See* Sigourney, Robinson & Shepard, ass'rs.)			
	Lewis, B. B., and James Shepard. (*See* Shepard & Lewis.)			
53,312	Lewis, Charles B	Clifton, Ohio	Movement, mechanical	Mar. 20, 1866.
59,421	Lewis, Cyrus	Nelson, Ohio	Fence jacks	Nov. 6, 1866.
60,206	Lewis, Elisha W	Philadelphia, Pa	Planes, core-box	Dec. 4, 1866.
	Lewis, G., and J. N. Pease. (*See* Pease & Lewis.)			
59,238	Lewis, George T	do	Alumina, acetate of, manufacture of	Oct. 30, 1866.
59,239	Same	do	Alumina, sulpho-acetate of, manufacture of	Oct. 30, 1866.
60,217	Lewis, Henry C	Essex, Conn	Bit, counter-sink	Dec. 4, 1866.
54,376	Lewis, James C., assignor to self and Robert C. Totten	Sharpsburg, Pa	Annealing box	May 1, 1866.
53,636	Lewis, Jesse, and Isaac Stanwood	Gloucester, Mass	Isinglass, purifying	April 3, 1866.
53,015	Lewis, John F	Pittston, Pa	Alarm, thief	Mar. 6. 1866.
53,155	Lewis, John L	Pittsburg, Pa	Axes, making	Mar. 13, 1866.
52,425	Lewis, Russel R	New York, N. Y	Well borer	Feb. 6, 1866.
	Lewis, R. S., and J. W. Preston. (*See* Sickels, Gerard, assignor.)			
	Lewis, Theodore G., and George B. Snow. (*See* Snow & Lewis.)			
	Same.			
	Same.			
54,377	Lewis, William J	Pittsburg, Pa	Bolts, T-head, dies for making	May 1, 1866.
54,927	Lewis, W. K	Boston, Mass	Pea and bean sheller	May 22, 1866.
	Lewis, William K. (*See* Bray & Talpey, assignors.)			
54,182	Lewis, William K., and J. W. Bailey	Boston, Mass; West Brookfield, Mass	Cans, fruit, and other vessels, sealing	April 24, 1866.
55,877	Leyburn, Edward J	Lexington, Va	Harvester rakes	June 27, 1866.
57,157	Leyden, Austin	Atlanta, Ga	Sewing machines	Aug. 14, 1866.
53,840	Liburn, Frank	New York, N. Y	Steering screw	April 10, 1866.
	Lichtenstein, J. (*See* Sangster & Boyd, assignors.)			
53,376	Liddell, W. J. F., assignor to self and John P. Onderdonk	Erie, Pa	Car spring	Mar. 20, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Lieb, John W., and Albert Sonnekalb. (*See* Sonnekalb & Leib.) Same.			
57,342	Lieber, William	New York, N. Y.	Button-hole cutters	Aug. 21, 1866.
52,058	Liebold, C. Theodore	do	Harness bells	Jan. 16, 1866.
55,509	Liesche, Freiderich	East New York, N. Y.	Coffee, apparatus for making	June 12, 1866.
55,316	Liget, Josephus	Posey township, Ind	Broom head	June 5, 1866.
52,720	Light, Edward F.	Worcester, Mass.	Journal box	Feb. 20, 1866.
57,343	Same	do	Journal box	Aug. 21, 1866.
52,059	Light, Joseph F.	do	Shipper, device	Jan. 16, 1866.
60,392	Lighter, Samuel K.	Hamilton, Ohio	Harvester, rakes. (Antedated October 28, 1866.)	Dec. 11, 1866.
59,422	Lighter, Samuel K., and Thomas Harding	do	Drill, grain, tubes	Nov. 6, 1866.
56,236	Lightner, C. M.	Harrisburg, Pa.	Harvesters, corn	July 10, 1866.
56,067	Lightner, John H.	Shirleysburg, Pa.	Broom head	July 3, 1866.
2,233	Lillie, Lewis	Troy, N. Y.	Door knobs, bank and safe (Reissue)	April 24, 1866.
	Lilliendahl, G. A., and Thomas W. Roys. (*See* Roys & Lilliendahl.)			
	Lincoln, A. B. (*See* Thompson, Augustus J., assignor.)			
	Lincoln, D., and L. Richards. *See* Richards & Lincoln.)			
56,068	Lincoln, George H.	Providence, R. I.	Soap, toilet	July 3, 1866.
59,240	Lincoln, Marshall T.	Washington, D. C.	Bookbinders, sewing table for	Oct. 30, 1866.
58,652	Lincoln, N. C.	Brunswick, Maine.	Medicine	Oct. 9, 1866.
58,846	Lind, Adolphus	San Francisco, Cal.	Water wheels	Oct. 16, 1866.
57,344	Lindergreen, N. P.	Boston, Mass.	Sleds, childrens'	Aug. 21, 1866.
58,653	Lindner, Carl A.	Cincinnati, Ohio.	Carpet stretcher	Oct. 9, 1866.
58,654	Lindner, Ferdinand	Dayton, Ohio	Button-holes, apparatus for making	Oct. 9, 1866.
56,768	Lindsay, A.	Malone, N. Y.	Quartz crushers	July 31, 1866.
59,040	Lindsay, Alexander, and Myron Moses	do	Wearing apparel, hook pins for fastening	Oct. 23, 1866.
	Lindsay, John P. (*See* Hatch, Anson, assignor.)			
55,683	Lindsley, Jeremy E.	Goshen, Ind.	Sill and weather strip	June 19, 1866.
55,514	Lindsley, Thales	Rock Island, Ill.	Tunnelling rock, machine for	June 12, 1866.
53,156	Linebaek, M. H.	Greenfield, Ind.	Planter, corn, cultivators	Mar. 13, 1866.
56,237	Lineberger, Andrew J., and Henry	Jackson, Ill.	Separators, grain	July 10, 1866.
	Lines, Henry, *et. al.* (*See* Smith, T. S., assignor).			
52,426	Linfoot, Thomas	Cincinnati, Ohio	Bed-bottom, spring	Feb. 6, 1866.
57,345	Linthicum, Robert B	Lexington, Ill	Harvesters, corn	Aug. 21, 1866.
57,158	Lippiatt, Thomas	New York, N. Y.	Lathes, rose engine	Aug. 14, 1866.
53,157	Lippincott, John	Pittsburg, Pa.	Saws	Mar. 13, 1866.
55,423	Lippincott, John, assignor to self and Thomas Bakewell	do	Saws	June 5, 1866.
57,737	Lippincott, Joseph M	do	Oil, lubricating	Sept. 4, 1866.
57,738	Lipps, John S.	Brooklyn, N. Y.	Barrel for petroleum, &c	Sept. 4, 1866.
51,950	Lippy, David	Mansfield, Ohio	Hayforks, horse	Jan. 9, 1866.
57,931	Same	do	Car coupling	Sept. 11, 1866.
52,060	Liscomb, Richard W	Smithfield, Pa.	Hayforks, horse	Jan. 16, 1866.
53,994	Lisseubee, Robert	Greenville, Tenn	Lathe, pivot	Apr. 17, 1866.
52,863	Lister, Alfred and Edwin	Newark, N. J.	Offal, deodorizing	Feb. 27, 1866.

2,316	Little, Andrew	New York, N. Y	Type, printers' (Design)	May 15, 1866.
56,856	Little, E. C., assignor to Eveline Little	St. Louis, Mo	Steam pipes and boilers, covering for	July 31, 1866.
58,173	Same	do	Flasks, moulders'	Sept. 18, 1866.
58,948	Same	do	Hinges for moulders' flasks	Oct. 16, 1866.
57,523	Little, J. and S. W	Patoka, Ind	Evaporator	Aug. 28, 1866.
	Little, T. J., *et al.* (*See* Sawyer, Charles H., assignor.)			
53,250	Littlefield, Dennis G	Albany, N. Y	Stoves, tea-kettles, &c., attaching and hinging covers to	Mar. 13, 1866.
53,995	Same	do	Stove, base-burning	Apr. 17, 1866.
	Littlefield, H., and C. O. Morse. (*See* Estes, Samuel, assignor.)			
57,346	Litzenberg, William	Macon, Ill	Horseshoes	Aug. 21, 1866.
57,159	Livermore, Alonzo	Ashland, Pa	Fishway	Aug. 14, 1866.
51,951	Livermore, H. B	do	Fish-hooks	Jan. 9, 1866.
55,878	Livermore, O. J., assignor to self and Clark, Sawyer & Co	Worcester, Mass	Can opener	June 26, 1866.
	Livey, Thomas. (*See* Ball, Charles A., assignor.)			
51,952	Livingston, Albert W	Sidney, Ohio	Signals, railway	Jan. 9, 1866.
56,424	Livingston, Charles	Redwood City, Cal	Planing machines, wood-cutters for	July 17, 1866.
	Livingston, Henry W. (*See* Geroldsek, J. Lewis, assignor.)			
	Livingston, John H. (*See* Davis, Robt. W. and Daniel, assignors.) Same.			
52,061	Livingston, John L	Mount Carmel, Ill	Lime kiln	Jan. 16, 1866.
58,655	Livingston, J. W. and S. A	Hartford, Conn	Supporter and fastener, sash	Oct. 9, 1866.
	Livingston, M. M. (*See* Whysall & Porritt, assignors.)			
52,302	Livingston, Robert	New York, N. Y	Tobacco pipe. (Antedated January 18, 1866)	Jan. 30, 1866.
57,932	Llewellyn, J. Frederick	Louisville, Ky	Condenser	Sept. 11, 1866.
55,424	Lloyd, Aaron, assignor to Francis Hamblin	Mattoon, Ill	Clamps, floor	June 5, 1866.
53,841	Lloyd, James	Springfield, Ohio	Funnels, measuring	Apr. 10, 1866.
	Lloyd, John A. (*See* Roberts, Milton, assignor.)			
2,360	Lloyd, John S	Salem, N. J	Hoisting machine, hay (Reissue)	Sept. 18, 1866.
58,110	Lloyd, Thomas	Muncy, Pa	Hayforks, horse	Sept. 18, 1866.
	Lloyd, T. F., and J. W. Beebee. (*See* Beebe & Lloyd.)			
	Lobdell, George G., and L. Phleger. (*See* Phleger & Lobdell.)			
	Lobdell, George G., and W. F. Quinby. (*See* Quinby & Lobdell.)			
52,427	Lobenstein, Leon	New York, N. Y	Skirts, hoop	Feb. 6, 1866.
52,864	Loch, Joseph, and George Bayer	do	Locks. (Antedated, February 19, 1866)	Feb. 27, 1866.
2,372	Locher, Edward	Newark, N. J	Trade mark (Design)	July 24, 1866.
59,848	Lochhead, John	San Francisco, Cal	Valves, slide, balanced	Nov. 20, 1866.
53,456	Lochman, Augustus H	York, Pa	Burners, gas, and lamps, heating shade for	Mar. 27, 1866.
56,579	Lochman, C. L	Carlisle, Pa	Printing frames, porcelain	July 24, 1866.
57,347	Same	do	Funnels	Aug. 21, 1866.
59,800	Same	do	Printing frame, photographic	Nov. 20, 1866.
56,238	Lochridge, James	Danville, Ind	Washing machines	July 10, 1866.
58,847	Locke, Edward A	Boston, Mass	Casks and boxes, identifying mark for	Oct. 16, 1866.
55,879	Locke, E. A., and L. Henser	do	Tags or labels for express companies, &c	June 26, 1866.
	Locke, Jesse A. (*See* Salisbury, William H., assignor.)			
52,722	Locke, Sylvanus D	Janesville, Wis	Grain binders, reels for	Feb. 20, 1866.
56,580	Same	do	Grain binders	July 24, 1866.
57,739	Same	do	Grain binders	Sept. 11, 1866.
60,208	Same	do	Grain binders	Dec. 4, 1866.
54,833	Locke, William, J. Warrington, W. E. Carrett, W. E. Marshall, and J. Telford.	England	Coal, minerals, &c., method of mining	May 15, 1866.
2,510	Lockhart, William L., and J. C. Seelye	East Cambridge, Mass	Burial casket (Design)	Nov. 27, 1866.
60,393	Lockie, James H	Humphrey, N. Y	Wagon springs, braces for	Dec. 11, 1866

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Lockitt, Charles. (*See* Mayhew, Theophilus, assignor.)			
58,848	Lockling, Lewis E	Perrysburg, N. Y	Fence	Oct. 16, 1866.
	Lockwood & Everett. (*See* Everett, Charles J., assignor.)			
	Same.			
55,317	Lockwood, C. L	New York, N. Y	Collar and neck-tie supporter	June 5, 1866.
54,818	Lockwood, Edwin, assignor to self and William H. Carryl	Bordentown, N. J	Window, ventilating, device for operating sashes of	May 15, 1866.
53,842	Lockwood, Edwin, and George W. Pitman	do	Car-seats	Apr. 10, 1866.
57,933	Lockwood, Hamilton D	Charlestown, Mass	Syringes, elastic bulb	Sept. 11, 1866.
55,123	Lockwood, H. H	Madison, Wis	Medical compound	May 29, 1866.
	Lockwood, John S., *et al.* (*See* Terwilliger & Lockwood.)			
	Lockwood, John T., *et al.* (*See* Collins, Richard, assignor.)			
60,394	Lockwood, Radcliffe B., assignor to Lockwood & Everett	New York, N. Y	Disinfecting noxious vapors from rendering houses, hospitals, &c.	Dec. 11, 1866.
	Lockwood, R. B., and C. J. Everett. (*See* Gray, C. E., assignor.)			
	Reissue.			
53,457	Lockwood, Samuel M	Chicago, Ill	Ploughs, sulky	Mar. 27, 1866.
56,425	Lockwood, Thomas E	Cincinnati, Ohio	Churns	July 17, 1866.
	Lockwood, W. E. and E. D., *et al.* (*See* Parks, Robert, assignor.)			
	Lockwood, William E. (*See* Packer, Edward E. and Charles T., assignors.)			
55,124	Loeffler, Louis	East Cambridge, Mass	Decanter stopper, self-acting	May 29, 1866.
54,928	Loewenberg, Henry	New York, N. Y	Buckles	May 22, 1866.
53,081	Loewenberg, Henry, assignor to self and Emile Granier	do	Paper for postage stamps	Mar. 6, 1866.
59,241	Löffler, Karl	Hoboken, N. J	Cork pull	Oct. 30, 1866.
53,458	Löffler, Philip	Milwaukee, Wis	Windmills	Mar. 27, 1866.
52,723	Logan, Hugh	Washoe City, Nevada	Quartz mills, sluice for	Feb. 20, 1866.
56,069	Logan, John B	Thorntown, Ind	Lock for mail bags and carpet sacks	July 3, 1866.
	Logendyke, B. F. S. (*See* Carnes, F. M., assignor.)			
55,442	Lohage, Anton	Prussia	Steel casting	June 5, 1866.
53,637	Lomas, John R	West Haven, Conn	Hinges	Apr. 3, 1866.
	Lomont, F. T., *et al.* (*See* Brown, Ingham & Lomont.)			
52,581	Londheim, Lewis H	New York, N. Y	Water-closets, supplementary seats for. (Antedated February 2, 1866.)	Feb. 13, 1866.
58,551	Long, Josiah, assignor to Jacob G. Wolf	Morristown, N. J	Screens, grain	Oct. 2, 1866.
	Longley, John B., *et al.* (*See* Smith, John P., assignor.)			
58,849	Longley, Samuel M	Hudson, N. Y	Railroad cars, joints for	Oct. 16, 1866.
55,510	Longsdorf, H. A. and D. E	Mechanicsburg, Pa	Paint	June 12, 1866.
59,131	Longshore, J. C., assignor to self and John Longshore	Mansfield, Ohio	Stove-cover lifter	Oct. 23, 1866.
	Longton, Thomas C., and William Valentine. (*See* Valentine & Longton.)			
60,209	Look, John J	Farmington, Maine	Wagon brakes	Dec. 4, 1866.
52,582	Loomis, Benjamin T	New York, N. Y	Fire-arms, revolving	Feb. 13, 1866.
53,996	Same	do	Tap and reamer, expanding	Apr. 17, 1866.
58,111	Loomis, Levi W	Homer, N. Y	Tires, apparatus for upsetting	Sept. 18, 1866.
58,949	Loper, Henry S., assignor to self and Collins, Peck & Co	New Haven, Conn	Skirts, hoop, adjustable frames for forming	Oct. 16, 1866.
52,008	Lord, Edward	Great Britain	Cotton and other fibrous substances, cleaning	Jan. 9, 1866.

53,242	Same	do	Cranks on rods, machine for bending	Mar. 13, 1866.
	Lord, John M., *et al.* (*See* Sutherland, James W., assignor.)			
58,850	Loring, Silas H	Lawrence, Mass	Hose coupling	Oct. 16, 1866.
56,769	Loth, Henry	Philadelphia, Pa	Table and stool	July 31, 1866.
57,524	Lothrop, Henry O	Milford, Mass	Cans, &c., machine for applying screw mouth-pieces to	Aug. 28, 1866.
57,525	Louden, William	Fairfield, Iowa	Hay-stacking device	Aug. 28, 1866.
57,526	Loudon, Archibald and James	Boston, Mass	Water-closet valves	Aug. 28, 1866.
	Louderback, Alfred. (*See* Freeport, Martin, assignor.)			
	Same.			
55,126	Loughborough, S. B	Canandaigua, N. Y	Locks, fastening keys in. (Antedated May 18, 1866)	May 29, 1866.
60,637	Louis, Peter	New York, N. Y	Brooms, sprinkling attachment for	Dec. 18, 1866.
57,740	Lourrentz, M. J	Leavenworth, Kansas	Washing machine	Sept. 11, 1866.
	Loutrel, Cyrus H. (*See* Francis, Lewis, assignor.) Reissue.			
	Same.			
53,016	Love, Horace W	Brooklyn, N. Y	Wrench, screw	Mar. 6, 1866.
59,242	Love, John J	New York, N. Y	Wrench, double-headed	Oct. 30, 1866.
59,423	Love, William, and Orion Thornley	Indianapolis, Ind	Splitting, wood, and other machines, device for operating	Nov. 6, 1866.
53,536	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Wells, artesian, drill-feed for	Mar. 27, 1866.
52,062	Loveland, John C	Springfield, Vt	Dough kneader	Jan. 16, 1866.
2,265	Same	do	Dough kneader (Reissue)	June 5, 1866.
53,740	Loveland, Joseph D., assignor to Dayton S. Morgan	Wheatfield, N. Y	Harvester rakes	Apr. 3, 1866.
51,841	Loveless, Charles B	Syracuse, N. Y	Air, apparatus for carburetting	Jan. 2, 1866.
53,843	Same	do	Air, apparatus for carburetting	Apr. 10, 1866.
52,865	Lovett, John L., John Wappich, and James Wood	Salem, Mass	Burial cases	Feb. 27, 1866.
54,745	Lovett, Rodmon	Canton, Ohio	Rack, cow and sheep	May 15, 1866.
53,158	Lovett, Thomas R	Mount Airy, Pa	Sewing machines, fan attachment for	Mar. 13, 1866.
55,127	Low, Addison	Albany, N. Y	Valves, safety	May 29, 1866.
2,184	Low, H. H., assignor through mesne assignments to Charles S. Burt.	Dunleith, Ill	Shingle machines (Reissue)	Mar. 6, 1866.
53,638	Low, Oscar	Chelsea, Mass	Needles, tag	Apr. 3, 1866.
60,395	Lowe, Barker	Fall River, Mass	Piston packing	Dec. 11, 1866.
	Lowe, John, and Ira E. Wilson. (*See* Wilson & Lowe.)			
57,527	Lowe, John K	Cleveland, Ohio	Bronzing machine	Aug. 28, 1866.
56,070	Lowe, Joshua	New York, N. Y	Steam gauges	July 3, 1866.
	Lowell Manufacturing Company. (*See* Ney, Elemir J., assignor.)			
	Design.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
58,438	Lowman, H. L	New York, N. Y	Pick and axe, combined	Oct. 2, 1866.
60,022	Same	do	Pickaxes, dies for forming the eyes of	Nov. 27, 1866.
2,167	Lowman, H. L., assignor to the Washoe Tool Company	do	Tools (Reissue)	Feb. 6, 1866.
52,724	Lowmiller, Alpheus	Jewett, Ohio	Harvesters	Feb. 20, 1866.
51,842	Lowry, Thomas	Pittsburg, Pa	Wells, apparatus for drawing pipes from	Jan. 2, 1866.
53,313	Loy, Daniel S	Graecham, Md	Tuyeres	Mar. 20, 1866.
53,997	Lozier, G. T	Philadelphia, Pa	Scraper, foot	Apr. 17, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Lucas, Edmund G. (*See* Whittemore, Thomas, assignor.)			
54,378	Lucas, Elijah A	Bloomington, Ill	Washing machine	May 1, 1866.
	Lucas, H. C., *et al.* (*See* Spear, Chauncey, assignor.)			
58,656	Lucas, Heman S	Chester, Mass	Cartridge, blasting	Oct. 9, 1866.
57,528	Lucas, John and William H	Philadelphia, Pa	Composition for putty	Aug. 28, 1866.
	Lucas, Robert T. (*See* Chase, Remington G., assignor.)			
58,112	Luce, William H	Hampton, Ill	Ploughs, shovel	Sept. 18, 1866.
52,303	Ludlow, W. D	New York, N. Y	Cotton pickers	Jan. 30, 1866.
52,725	Ludoff, August	....do	Piano-fortes, iron frames for	Feb. 20, 1866.
	Ludovici, Louis and Louis, jr. (*See* Nowak, Moriz, assignor.)			
	Reissue.			
55,684	Lufkin, C. M	Claremont, N. H	Ploughs	June 19, 1866.
2,399	Lufkin, C. M., assignor through mesne assignments to Hobart H. Smith.	Carlisle, Pa	Harvesters (Division A, reissue)	Nov. 27, 1866.
2,400	Same	....do	Harvesters (Division B, reissue)	Nov. 27, 1866.
2,401	Lufkin, C. M., assignor through mesne assignments to Hobart H. Smith.	....do	Harvesters (Division C, reissue)	Nov. 27, 1866.
2,402	Same	....do	Harvesters (Division D, reissue)	Nov. 27, 1866.
2,403	Same	....do	Harvesters (Division E, reissue)	Nov. 27, 1866.
57,160	Lugenbell, Peter	Greensburg, Ind	Ditching machine	Aug. 14, 1866.
56,960	Lugenbell, P., and T. Barns	....do	Rakes, horse	Aug. 7, 1866.
51,843	Lugo, Orazio	New York, N. Y	Petroleum and other substances, distilling	Jan. 2, 1866.
58,113	Same	....do	Petroleum, &c., apparatus for distilling	Sept. 18, 1866.
60,396	Lugo, Orazio, and T. O. L. Schrader	....do	Petroleum oils and other substances, process of distilling	Dec. 11, 1866.
52,304	Lumbard, W. G	Georgetown, Ill	Sawing machines	Jan. 30, 1866.
57,741	Lunt, C. M., and W. F	Biddeford, Maine	Fruit picker	Sept. 4, 1866.
60,023	Lupton, G. H	Cleveland, Ohio	Windows and doors, mode of hanging	Nov. 27, 1866.
55,128	Lupton, Joshua R., and N. E	Stafford, Ohio	Jar, fruit	May 29, 1866.
2,382	Lupton, T. N., assignor to Robert T. Campbell	Washington, D. C	Harvesters (Reissue)	Oct. 23, 1866.
53,460	Lupton, William B	Pittsburg, Pa	Composition for core powder	Mar. 27, 1866.
53,459	Luse, D., and D. F	Spring Mills, Pa	Planters, corn	Mar. 27, 1866.
55,129	Luse, D. F	....do	Gates, farm	May 29, 1866.
53,639	Lusk, Alpheus A., and Samuel A. Wells	Wooster, Ohio	Car coupling	Apr. 3, 1866.
53,844	Lutes, Philip	Platte City, Mo	Washing machine	Apr. 10, 1866.
60,210	Luther, J., and A. Marsh	Worcester, Mass	Fastening, window-blind	Dec. 4, 1866.
52,866	Luther, James H	Petroleum Centre, Pa	Well-tube extractors, oil	Feb. 27, 1866.
56,961	Same	....do	Wells, oil, grab-tool for	Aug. 7, 1866.
60,211	Lutton, Edward T. C	Philadelphia, Pa	Wool, &c., machine for shearing twisted strands of	Dec. 4, 1866.
60,530	Same	....do	Yarn, manufacture of	Dec. 18, 1866.
55,130	Lutz, George	Lancaster, Ohio	Steam generators, water-indicators for	May 29, 1866.
55,131	Lydy, John	Georgetown, Ohio	Fastenings, sash	May 29, 1866.
55,132	Lyford, Samuel L	Portland, Maine	Augers, gauges for	May 29, 1866.
53,537	Lyle, John, assignor to self and C. H. Allen	Newark, N. J	Punch, spring	Mar. 27, 1866.
57,044	Same	....do	Saw-sets	Aug. 7, 1866.
52,867	Lyman, David	Middlefield, Conn	Clothes wringer	Feb. 27, 1866.

	Same. (*See* Reid & Swift.)			
	Same.			
	Same.			
	Same.			
	Same.			
57,934	Lyman, Edward	New Haven, Conn	Screw-cutting tools, gauge for	Sept. 11, 1866.
55,133	Lyman, Theodore	Sandusky, Ohio	Car truck	May 29, 1866.
51,844	Lyman, William W	West Meriden, Conn	Jars, fruit, stoppers for	Jan. 2, 1866.
54,929	Same	do	Cans, fruit, device for opening	May 22, 1866.
52,063	Lynch, George F	Milwaukee, Wis	Car brakes	Jan. 16, 1866.
52,181	Same	do	Car box, railroad	Jan. 23, 1866.
57,161	Same	do	Car brake	Aug. 14, 1866.
54,567	Lynn, John, and Jackson R. Crowell	Seneca Falls, N. Y.	Bed bottom	May 8, 1866.
56,770	Lyon, C. E	Worcester, Mass	Lamps, extinguisher and regulator for	July 31, 1866.
	Lyon, Frederick H. (*See* Freese, Conrad, assignor.)			
58,439	Lyon, J. B., and Arnold Doll	Cleveland, Ohio	Electro-magnets, induction coils for	Oct. 2, 1866.
56,239	Lyon, James W	Brooklyn, N. Y.	Umbrella tips, machines for drilling and countersinking	July 10, 1866.
57,045	Lyon, Ransom, assignor to self, A. Shiland, and E. J. Gerdon, jr.	West Troy, N. Y.	Riveting machines	Aug. 7, 1866.
2,277	Lyon, Robert S.	New York, N. Y.	Trade-mark (Design)	Mar. 6, 1866.
52,868	Lyon, Virgil H	Plainfield, Ind	Wells, device for boring	Feb. 27, 1866.
	Lyon, William H. (*See* Puffer, Stephen, assignor.)			
54,566	Lyon, William P	Port Chester, N. Y.	Oyster cracker	May 8, 1866.
60,397	Lyons, James B., assignor to E. McNiell, G. H. Hollister, H. B. Graves, and H. T. Brownell.	Cornwall, Conn	Peat machine	Dec. 11, 1866.
60,398	Same	do	Peat, apparatus for grinding	Dec. 11, 1866.
55,318	Maas, Henry	Homestead, Iowa	Pumps, rotary	June 5, 1866.
56,581	Mabbs, John	Isle Royal Mines, Mich	Quartz crushers	July 24, 1866.
58,440	Mabon, Andrew	Philadelphia, Pa	Skates	Oct. 2, 1866.
54,746	Macdaniel, Osborne	New York, N. Y.	Salt, sugar, &c., evaporating solutions of	May 15, 1866.
52,869	Macdonough, James	do	Ink for printing postage stamps, manufacture of	Feb. 27, 1866.
53,461	Macdonough, J	do	Boats, collapsible float for	Mar. 27, 1866.
54,183	McDonough, J	do	Torpedoes, submarine	Apr. 24, 1866.
56,071	Macferran, Samuel	Philadelphia, Pa	Fasteners, door-key	July 3, 1866.
57,935	Mack, Francis A.	Niles, Mich	Well tubes	Sept. 11, 1866.
60,024	Mack, John C.	Philadelphia, Pa	Boots and shoes	Nov. 27, 1866.
53,314	Mack, W. P.	Canandaigua, N. Y.	Valves, piston	Mar. 20, 1866.
53,462	Mackay, D	United States army	Collars, men's	Mar. 27, 1866.
	Mackay, W., and H. W. Alden. (*See* Alden & Mackay.)			
55,204	Mackenzie, P. W., and C. W. Isbell, assignors to the Smith and Sayre Manufacturing Co.	Jersey City, N. J / New York, N. Y.	Furnaces, cupola, and other	May 29, 1866.
55,134	Mackerley, Benjamin	Paint, Ohio	Governors, atmospheric	May 29, 1866.
53,463	Mackey, Alexander, and Eberhardt Muller	New York, N. Y. / Williamsburg, N. Y.	Centrifugal machines	Mar. 27, 1866.
60,638	Mackey, James L.	Seymour, Ind.	Valves, steam, rotary	Dec. 18, 1866.
54,568	Mackey, Lewis	Dunmore, Pa	Hides, green, apparatus for treating	May 8, 1866.
52,000	Mackie, Alexander, assignor to Borie & Mackie	Philadelphia, Pa	Cork-cutting machines	Jan. 9, 1866.
	Mackrell, W. J., and H. B. Howe. (*See* Howe & Mackrell.)			
56,426	McLennan, Donald R.	Cincinnati, Ohio	Sawing machines	July 17, 1866.
51,845	MacMullen, John	New York, N. Y.	Pencil sharpeners	Jan. 2, 1866.
	Macneil, Neil. (*See* Dodds, William B., assignor.)			
	Macqueen, William N., and Abraham Dyson. (*See* Dyson & Macqueen.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,240	MacRae, Charles	New York, N. Y.	Gas-cocks, automatic	July 10, 1866.
51,953	Madden, John	Cleveland, Ohio	Legs, artificial	Jan. 9, 1866.
57,162	Madheim, Hermann	Brooklyn, N. Y.	Pens, fountain	Aug. 14, 1866.
57,348	Madison, James R.	Oneida, Ill.	Washing machine	Aug. 21, 1866.
56,962	Macby, Jeremiah	Portage, Wis.	Gates, flood	Aug. 7, 1866.
59,849	Magee, Richard	Philadelphia, Pa.	Envelopes	Nov. 20, 1866.
	Magee, Thomas J., and Jacob Ballard. (*See* Ballard & Magee.)			
52,726	Magoun, Abner B.	West Hanover, Mass.	Screen, window	Feb. 20, 1866.
58,114	Magrowitz, William, assignor to self, Wm. Freedman, and James Davis.	New York, N. Y.	Spirit meter	Sept. 18, 1866.
56,427	Maguire, J. F.	East Boston, Mass.	Hands, artificial	July 17, 1866.
56,582	Maguire, James F.	do	Tuyeres	July 24, 1866.
53,760	Mahler, Moritz	Montreal, Canada	Muffs	Apr. 3, 1866.
55,685	Mahler, T. W.	Rome, N. Y.	Water-wheels	June 19, 1866.
59,618	Mahon, Charles	Macon, Ga.	Ticket holder	Nov. 13, 1866.
59,424	Main, Thomas	Green Point, N. Y.	Steam generators	Nov. 6, 1866.
57,936	Maine, Peter N.	Olmstead Falls, Ohio	Mail-bags on railway cars, method of receiving and delivering	Sept. 11, 1866.
57,529	Maine, Sebeus C.	Boston, Mass	Screening and sifting apparatus	Aug. 28, 1866.
60,212	Same.	do	Cooling and disinfecting, apparatus for. (Antedated Nov. 22, '66)	Dec. 4, 1866.
58,441	Makepeace, Francis A.	Worcester, Mass.	Fastening for window blinds	Oct. 2, 1866.
55,135	Malbone, Henry B.	Middletown, Conn.	Mop handles. (Antedated May 21, 1866.)	May 29, 1866.
51,846	Malcolm, James	New York, N. Y.	India-rubber and gutta-percha compounds, colored	Jan. 2, 1866.
51,847	Same.	do	India-rubber and gutta-percha compounds, manufacture of	Jan. 2, 1866.
51,848	Same.	do	India-rubber and gutta-percha compounds, manufacture of	Jan. 2, 1866.
51,849	Same.	do	India-rubber and gutta-percha compounds, vulcanized, colored, manufacture of.	Jan. 2, 1866.
52,583	Males, Samuel	Cincinnati, Ohio	Mills, cider	Feb. 13, 1866.
	Malkin & Company. (*See* Boulton & Worthington, assignors.)			
54,569	Mallerd, William	Bridgeport, Conn.	Burners, gas, regulating attachment for	May 8, 1866.
53,159	Mallett, Abraham	Erie, Pa.	Potatoes, to prevent potato rot, mode of treating	Mar. 13, 1866.
54,570	Mallon, Charles J.	Schoharie, N. Y.	Iron, sad	May 8, 1866.
53,017	Mallory, Charles A.	Cambridge, Mass.	Buckles	Mar. 6, 1866.
54,184	Mallory, George	Watertown, Conn.	Fans	Apr. 24, 1866.
60,213	Same	Bridgeport, Conn	Hat-brims, springs for	Dec. 4, 1866.
55,014	Malone, Joseph, assignor to self and George Wetteugill	Temperanceville, Pa.	Furnace for annealing sheet-iron	May 22, 1866.
53,845	Maloy, James W.	Boston, Mass	Marble, machines for cutting and finishing	Apr. 10, 1866.
58,852	Same.	do	Marble polishing machine	Oct. 16, 1866.
58,853	Same.	do	Granite, machine for cutting	Oct. 16, 1866.
59,916	Same	do	Marble, machine for polishing	Nov. 20, 1866.
60,214	Maltby, Philo	Kent, Ohio	Cylinders, expanding	Dec. 4, 1866.
58,442	Maltby, Sidney, and J. R. Brown	Dayton, Ohio	Stove covers, &c., lifter for	Oct. 2, 1866.
	Manchester, Albert T. (*See* Goodrum, Thomas, assignor.)			
	Manchester, Alfred J., and Eli H. Howard. (*See* Howard & Manchester.)			

52,001	Manderson, James, and Samuel Farringer, assignors to James Manderson.	Philadelphia, Pa	Vessels, apparatus for removing cargoes from	Jan. 9, 1866
59,150	Mangeon, Ernest	France	Privy seats	Oct. 23, 1866
59,722	Manigle, Edward M., assignor to George H. Hazelton	Philadelphia, Pa	Metal, sheet, manufacture of wash-boilers, kettles, and other articles made of.	Nov. 13, 1866.
54,747	Manley, A. D	Washington, Mich	Wagons, dumping	May 15, 1866.
	Manley, Daniel B., and Sidney S. Wheeler. (*See* Wheeler & Manley.)			
51,954	Manley, Emmons	Marion, N. Y	Latch, door	Jan. 9, 1866.
59,425	Manley, G. B	Cogan Station, Pa	Hammers for forging blooms	Nov. 6, 1866.
58,348	Manlove, George H., and J. P. Green, assignors to George H. Manlove.	Chicago, Ill	Harvesters, corn	Sept. 25, 1866.
58,349	Same	do	Harvesters, corn	Sept. 25, 1866.
54,185	Mann, George, jr., and Henry Hise	Ottawa, Ill	Ventilating car window. (Antedated April 12, 1866)	Apr. 24, 1866.
	Mann, O. E., and James H. Marshall. (*See* Marshall & Mann.)			
59,619	Manner, G. C	New York, N. Y	Piano-fortes	Nov. 13, 1866.
54,379	Manning, Alfred	Fairhaven, Conn	Vessels, jaws for booms and gaffs of	May 1, 1866.
57,349	Manning, Cephus	Chillicothe, Ohio	Steel, mode of tempering. (Antedated August 8, 1866)	Aug. 21, 1866.
	Manning, E. B. (*See* Flagg, F. W., assignor.)			
55,319	Manning, G. S	Springfield, Ill	Carriage springs	June 5, 1866.
60,531	Manning, Ira	Philadelphia, Pa	Bridle fronts, machine for forming	Dec. 18, 1866.
56,241	Manning, William	Chelmsford, Mass	Cake, corn, machines	July 10, 1866.
57,441	Mannon, Benjamin, assignor to self and Isidor Kann	Newport, Ky	Hair crimpers	Aug. 21, 1866.
58,741	Mansell, Richard C	England	Car wheels	Oct. 9, 1866.
55,880	Mansfield, David	Oshkosh, Wis	Fluid, burning	June 26, 1866.
56,583	Mansfield, M. H	Ashland, Ohio	Threshing and hulling clover, machine for	July 24, 1866.
58,657	Mansfield, M. H	South Canton, Mass	Buckles and straps, metallic fastenings for	Oct. 9, 1866.
	Manvel, Albert. (*See* Olds, A. M., assignor)			
55,425	Manville, Eli J., assignor to self and Sidney L. Clark	Waterbury, Conn	Metal, operating dies for forming articles of	June 5, 1866.
58,730	Manville, Eli J., assignor to O. L. Hopson and H. P. Brooks	do	Wire, machine for pointing	Oct. 9, 1866.
	Manville, Eli J., *et al.* (*See* Hopson, Manville & Brooks.)			
53,018	Marble, F. B	Columbus, Ohio	Tables, machine for jointing tops and leaves of	Mar. 6, 1866.
52,428	Marcellus, Albert	Pittsford, N. Y	Digger, potato	Feb. 6, 1866.
	March Brothers, Pierce & Co. (*See* Snow, George H., assignor.)			
56,428	Merchant, Joseph	Cambridge City, Ind	Straw cutters	July 17, 1866.
51,898	Marchbank, John, assignor to self and Joseph M. P. Price	Lansingburg, N. Y	Printing oil-cloths, apparatus for	Jan. 2, 1866.
59,850	Marchbank, John, assignor to James McQuade	do	Brush, paint	Nov. 20, 1866.
59,426	Marchbank, J., and W. H. Humphrey	do	Faucets	Nov. 6, 1866.
57,350	Marchington, Adam	Upland, Pa	Looms, stop-motion of	Aug. 21, 1866.
60,215	Marcy, John J., assignor to Edward Miller	West Meriden, Conn	Lamp burners	Dec. 4, 1866.
2,412	Same	do	Lamp burners (Reissue)	Dec. 4, 1866.
52,727	Marcy, Merrick D	Worcester, Mass	Bolt-heading machine	Feb. 20, 1866.
53,741	Marden, J. A., assignor to Samuel Vance and Albert E. Carrier	Newburyport, Mass	Leather-splitting machines	Apr. 3, 1866.
54,571	Marden, Jeremiah A	do	Leather-splitting machines	May 8, 1866.
54,186	Marden, Samuel	Newton, Mass	Peat machines	Apr. 24, 1866.
53,538	Marden, Samuel, assignor to self, William H. Allen, A. P. Trott, and C. Cobb, jr.	do	Fuel, machine for preparing peat for. (Antedated Dec. 5, 1865)	Mar. 27, 1866.
55,205	Marden, Samuel, assignor to self and Dustin Lancey	do	Peat, apparatus for preparing	May 29, 1866.
	Maréchal, C. R., and C. M. E. Du Motay. (*See* Du Motay & Maréchal.			
	Same.			
58,854	Marinus, T. J., James and William Whait	Independence, Iowa	Harrows, carriage	Oct. 16, 1866

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,429	Markham, A. S	Bushnell, Ill	Cultivators	Feb. 6, 1866.
60,399	Markham, Homer C., assignor to self and Charles G. Riggs	West Turin, N. Y	Butter from cheese whey, making	Dec. 11, 1866.
53,998	Markland, Thomas T., jr	Philadelphia, Pa	Water-cooler	Apr. 17.1866.
55,686	Same	do	Lamp, street	June 19, 1866.
58,270	Marks, A. A	New York, N. Y	Card holder	Sept. 25, 1866.
	Marks, W., *et al.* (*See* Spear, Chauncey, assignor.)			
	Same			
	Marlay, Joseph K. (*See* Bell, C. S., assignor.)			
	Martin, John M., and George H. Snow. (*See* Greenleaf, Joseph H., assignor.)			
56,072	Marmaduke, Lucinda	Shelbyville, Mo	Medical compound	July 3, 1866.
2,179	Marquard, F	Rahway, N. J	Rubber, white, manufacture of (Reissue)	Feb. 20, 1866.
2,180	Same	do	Rubber, white, manufacture of (Reissue)	Feb 20, 1866.
53,375	Marquez, Lorenzo, assignor to J. J. Ribon and J. M. Munoz	New York, N. Y	Musical instruments	Mar. 20, 1866.
57,742	Marquis, John	San Francisco, Cal	Hoppers, slop	Sept. 4, 1866.
	Marrow, J. H., and William Christian. (*See* Christian & Marrow.)			
	Marsh, A., and J. Luther. (*See* Luther & Marsh.)			
2,307	Marsh, Edward A., assignor to Gaylord Manufacturing Company	Chicopee, Mass	Pen (Design)	May 8, 1866.
54,468	Marsh, Edwin E., assignor to American Eyelet Company	Providence, R. I	Eyelets, machines for making	May 1. 1866.
2,354	Marsh, James S	Lewisburg, Pa	Harvesters (Reissue)	Sept. 11, 1866.
58,855	Same	do	Ploughs	Oct. 16, 1866.
58,856	Same	do	Reaping machines	Oct. 16, 1866.
59,775	Same	do	Stoves, coal	Nov. 20, 1866.
	Marsh, Thomas, and Charles E. Griffin. (*See* Griffin & Marsh.)			
55,320	Marshall, David	Genoa, N. Y	Churns	June 5, 1866.
	Marshall, E. T., and Daniel M., *et al.* (*See* Tickles & Marshall, assignors.)			
	Marshall, George William, and Alfred Shedlock. (*See* Shedlock & Marshall.)			
	Marshall, J. C., and C. Robinson. (*See* Robinson & Marshall.)			
60,025	Marshall, J. H., and O. E. Mann	Lockport, N. Y; Somerset, N. Y	Ditching machine	Nov. 27, 1866.
	Marshall, Otis. (*See* Collicott, John, assignor.)			
54,748	Marshall, W. C	New York, N. Y	Fires, mode of extinguishing	May 15, 1866.
	Marshall, W. E., *et al.* (*See* Locke, Warrington, Carrett, Marshall, and Telford.)			
59,776	Marshall, Zephaniah	Andersonville, Ind	Medical compound	Nov. 20, 1866.
52,430	Marston, Oliver H. and John A	Centre Sandwich, N. H	Heel cutter	Feb. 6. 1866.
	Martin, Benjamin. (*See* Crowe, George W., assignor.)			
53,082	Martin, B. G., assignor to self, W. Sanford, T. M. Davis, and L. H. Walton.	Philadelphia, Pa	Liquids, apparatus for cooling. (Antedated March 2, 1866)	Mar. 6, 1866.
2,271	Martin, Charles S	Milwaukee, Wis	Wagons, attaching springs to (Division A of reissue)	June 5, 1866.
2,272	Same	do	Wagon spring (Division B of reissue)	June 5, 1866.
56,073	Same	do	Wagon spring	July 3, 1866.
56,074	Same	do	Wagon spring	July 3, 1866.

56,963	Same	....do	Wagons	Aug. 7, 1866.
53,315	Martin, David J.	Covington, Ohio	Tuyeres	Mar. 20, 1866.
	Martin, Edward G., and Samuel McCambridge. (*See* McCambridge & Martin.)			
54,380	Martin, Frank N.	Cincinnati, Ohio	Stirrup	May 1, 1866.
	Martin, Gaylord, and William Barker. (*See* Barker & Martin.)			
56,584	Martin, Hubbard A.	Jeffersonville, Ind.	Ploughs	July 24, 1866.
56,857	Martin, John R., assignor to Samuel K. Hilton	Boothbay, Maine	Fishing-line sinkers	July 31, 1866.
54,381	Martin, Joseph	New Oxford, Pa.	Gates	May 1, 1866.
51,955	Martin, Joseph T.	New York, N. Y.	Propeller	Jan. 2, 1866.
57,351	Martin, Mark M. and Frank	Aurora, Ind.	Car seats, railroad	Aug. 21, 1866.
	Martin, Nicholas, and Theodore Gilson. (*See* Gilson & Martin.)			
57,163	Martin, Richard	Brooklyn, N. Y.	Piston-rod packing	Aug. 14, 1866.
57,530	Martin, W. M.	New York, N. Y.	Railroad wedge rail	Aug. 28, 1866.
52,728	Martin, William P.	Salem, Mass.	Leather, machine for rolling	Feb. 20, 1866.
55,687	Martin, William W.	Alleghany, Pa.	Boiler heads, bending flanges upon	June 19, 1866.
60,026	Martindale, James B.	New Castle, Ind.	Hooks and eyes	Nov. 27, 1866.
60,216	Same	....do	Carpet stretcher	Dec. 4, 1866.
2,282	Martino, J., J. Beesley, and J. Currie, assignors to Stuart & Peterson.	Philadelphia, Pa.	Furnace, portable (Design)	Mar. 13, 1866.
2,302	Martino, J, .J. Beesley and J. Currie, assignors to J. S. Clark	....do	Range, cooks' (Design)	May 1, 1866.
2,350	Martino, J., J. Beesley, and J. Currie, assignors to J. A. Sheppard.	....do	Stove, cooks' (Design)	July 3, 1866.
2,361	Martino, J., J. Beesley, and J. Currie, assignors to Lake, Bearder & Co.	....do	Stove (Design)	July 17, 1866.
57,743	Martins, Martin	New York, N. Y.	Pianos, metal frames for	Sept. 4, 1866.
59,243	Martz, George	Pottsville, Pa.	Hoisting and dumping coal	Oct. 30, 1866.
53,925	Marvin, Sumner, assignor to self and Alfred W. Boynton	South Royalston, Mass.	Stove-pipe damper	Apr. 10, 1866.
53,640	Marvin, Walter K.	New York, N. Y.	Steel for safes, manufacture of	Apr. 3, 1866.
57,255	Marx, Ernst, assignor to self, H. Dittrich, and J. Kerr	....do	Chair, swinging	Aug. 14, 1866.
59,042	Marx, Henry and Fritz	Baltimore, Md.	Paper pulp, apparatus for making	Oct. 23, 1866.
53,160	Masnata, David F.	New York, N. Y.	Ship, steam, rotary	Mar. 13, 1866.
53,316	Same	....do	Ships, steam, revolving screw	Mar. 20, 1866.
56,771	Mason, Alvin C.	Springfield, Vt.	Churns, gearing for	July 31, 1866.
60,027	Mason, C. C., assignor to self and Levi Mason	Brookfield, N. Y.	Process of curing hops	Nov. 27, 1866.
	Mason, C. E., and P. S. Bartlett. (*See* Bagley, Charles H., assignor.)			
	Mason, H. L., jr., and D. J., *et al.* (*See* Woods, George, assignor.)			
54,749	Mason, Lawrence	Turin, N. Y.	Tenoning machines	May 15, 1866.
54,750	Same	....do	Hubs, wagon, machines for boring	May 15, 1866.
56,075	Mason, John L.	Jefferson county, Ky.	Medicine for hog cholera	July 3, 1866.
	Mason, J. S., & Co. (*See* Gordon, W. J., assignor.)			
	Mason, J. W., *et al.* (*See* Robbins, R. C., assignor.) Reissue.			
57,352	Mason, L. G., assignor to self and S. S. Barber	Worcester, Mass.	Pulleys, friction	Aug. 21, 1866.
57,823	Mason, Matthew B., assignor to self and George W. Harris	Aurora, Ind.	Steam cylinders, pistons for	Sept. 4, 1866.
53,742	Mason, Melchor B., assignor to United States Mining and Ore Decomposing Company.	New York, N. Y.	Ores, process for desulphurizing	Apr. 3, 1866.
57,531	Mason, Sylvester G.	Elbridge, N. Y.	Pump pistons	Aug. 28, 1866.
52,431	Mason Sylvester G., and Calvin B. Gill	Rochester, N. Y.	Pumps	Feb. 6, 1866.
53,539	Mason, William, assignor to E. Remington & Sons	Ilion, N. Y.	Fire-arms, revolving	Mar. 27, 1866.
56,772	Mason, William B.	Boston, Mass.	Punches, hand, shears, &c., operating	July 31, 1866.
60,532	Mason, William B., assignor to self and Charles H. Moore	... do	Stamps, marking	Dec. 18, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,950	Mason, William H., assignor to self and H. K. W. Palmer	Boston, Mass	Piano-fortes	Oct. 16, 1866.
56,964	Masser, H. B	Sunbury, Pa	Roaster, coffee	Aug. 7, 1866.
57,353	Massey, G. B	Mobile, Ala	Railroads, turn-table for	Aug. 21, 1866.
59,043	Massey, John	New York, N. Y	Feed cutters	Oct. 23, 1866.
55,321	Masson, Rene	Fremont, N. Y	Tobacco pipe	June 5, 1866.
	Mast, P. P., and J. H. Thomas. (*See* Thomas and Mast.)			
	Same.			
58,271	Mastin, Daniel	Binghamton, N. Y	Levels	Sept. 25, 1866.
59,917	Masters, W. H	Princeton, Ill	Camera, solar	Nov. 20, 1866.
58,272	Masury, John W	Brooklyn, N. Y	Petroleum, packing vessels for	Sept. 25, 1866.
59,427	Mather, Charles C	Burlington, N. Y	Fence	Nov. 6, 1866.
57,827	Mather, Colin, assignor to Charles P. Button	England	Wells, machine for boring	Sept. 4, 1866.
57,828	Same	....do	Wells, drills for boring	Sept. 4, 1866.
57,830	Same	....do	Pumps, sand	Sept. 4, 1866.
57,937	Mathews, D. P	Winthrop, Mass	Tree protectors	Sept. 11, 1866.
	Mathews, J. E., *et al.* (*See* Sweeney, Mathews, and Hartley.)			
	Mathewson, J. R., and M. Foreman. (*See* Foreman and Mathewson.)			
	Mathias, H. R. (*See* McKinley, B. F., assignor.)			
54,269	Mathis, J., assignor to H. Kayser	Austria	Looms, roller temple for	Apr. 24, 1866.
52,584	Matthewman, George	Brooklyn, N. Y	Presses	Feb. 13, 1866.
53,317	Matthews, James A	St. Louis, Mo	Railway track cleaner	Mar. 20, 1866.
56,965	Matthews, James D	Bowling Green, Ohio	Sawing machines	Aug. 7, 1866.
	Matthews, John. (*See* Albertson, Albert, assignor.) Reissue.			
53,019	Matthews, John, jr	New York, N. Y	Bottling liquids, apparatus for	Mar. 6, 1866.
2,440	Same	....do	Tumbler, drinking (Design)	Sept. 25, 1866.
59,428	Matthews, William D	Columbia, Tenn	Churns	Nov. 6, 1866.
53,846	Mattison, Judson	Oswego, N. Y	Friction coupling	Apr. 10, 1866.
56,966	Mattix, James	Kokomo, Ind	Belt coupling	Aug. 7, 1866.
53,641	Mattocks, James A	Swansboro', N. C	Distilling pine wood	Apr. 3, 1866.
53,318	Maulsby, Silas B	Muncie, Ind	Evaporator	Mar. 20, 1866.
56,585	Same	....do	Evaporator	July 24, 1866.
54,187	Maurice, D. W.	Springfield, Ohio	Lathes	Apr. 24, 1866.
54,930	Same	....do	Churn dashers	May 22, 1866.
	Maurice, J. R., *et al.* (*See* Stiles, Ezra, assignor.)			
60,217	Mauvas, Paul Francois	New York, N. Y	Buttons	Dec. 4, 1866.
55,322	Maxell, Henry	Canton, Ohio	Gates	June 5, 1866.
57,744	Maxell, H. E., and H. Fessler	....do	Railroad switch	Sept. 4, 1866.
	Maxell, Henry, and Henry Fessler. (*See* Fessler & Maxell.)			
52,432	Maxfield, Charles A	New York, N. Y	Paper boxes, machine for making	Feb. 6, 1866.
57,354	Maxim, Hiram S	Boston, Mass	Hairs, irons for curling	Aug. 21, 1866.
56,242	Maxwell, James R., and Ezra Cope	Cincinnati, Ohio	Engines, steam	July 10, 1866.
59,429	Maxwell, William	Washington, N. J	Fishing nets	Nov. 6, 1866.
53,319	May, John M	Janesville, Wis	Quartz crushers	Mar. 20, 1866.
	May, M. S. (*See* Chandler, Rufus, assignor.)			

52, 808	Maycock, Henry	Verona, N. Y	Hay forks, horse, operating	Feb. 20, 1866.
	Mayer, Joseph. (*See* Watermann, Julius, assignor.)			
53, 847	Mayer, Nathaniel R. E	Chester C. H., S. C	Soap	Apr. 10, 1866.
	Mayer, William. (*See* Ali, Mati, assignor.)			
53, 464	Mayfield, W. D	Ashley, Ill	Hay, machine for raking and loading	Mar. 27, 1866.
53, 642	Same	do	Peaches, machine for cutting and stoning	Apr. 3, 1866.
56, 425	Mayhew, Oscar F., assignor to Wm. H. Weeks and G. M. Levette	Indianapolis, Ind	Furnaces, for puddling, heating, &c	July 17, 1866.
52, 364	Mayhew, Theophilus, assignor to self and Charles Lockitt	New York, N. Y	Pumps	Jan. 30, 1866.
56, 967	Maynard, Edward	Tarrytown, N. Y	Eye-glasses	Aug. 7, 1866.
59, 044	Same	do	Cartridges, metallic, priming. (Antedated Oct. 3, 1866)	Oct. 23, 1866.
	Maynard, Horatio B. (*See* Blessing, Wm., assignor.)			
57, 938	Mayor, Thomas	Pawtucket, R. I	Roving frames, flyers for	Sept. 11, 1866.
	Mayott, L. H., and Chas. S. Wells. (*See* Wells & Mayott.)			
57, 939	McAfee, B. J., and J. H. Wirt	Delphia, Ind	Drag, ground	Sept. 11, 1866.
57, 745	McAlister, J. R	Richville, N. Y	Carriage gearing	Sept. 4, 1866.
59, 244	Same	do	Sleigh brakes	Oct. 30, 1866.
59, 245	Same	do	Hubs, wagon, machines for boring	Oct. 30, 1866.
54, 572	McArdle, Edward	Cambridge, Mass	Glass bottles, tool for holding	May 8, 1866.
52, 790	McArthur, Duncan, assignor to Sargent & Company	New Haven, Conn	Screws, tacks, &c., mould for casting heads upon	Feb. 20, 1866.
2, 303	McArthur, John	Philadelphia, Pa	Railing (Design)	May 1, 1866.
57, 532	McArthur, William	do	Carpet cleaning machine	Aug. 28, 1866.
55, 323	McAulcy, Thomas	San Francisco, Cal	Water wheels	June 5, 1866.
53, 161	McAuley, Thomas, and M. L. Cheney	do / Illinoistown, Cal	Hose, covering for	Mar. 13, 1866.
57, 164	McAvoy, Hugh L	Baltimore, Md	Air, apparatus for carburetting	Aug. 14, 1866.
57, 940	Same	do	Air, apparatus for carburetting	Sept. 11, 1866.
	Same. (*See* Hutchinson, Elias S., assignor.)			
	McAvoy, Hugh L., and Elias S. Hutchinson. (*See* Hutchinson and McAvoy.)			
58, 273	McBeth, C. E	Hamilton, Ohio	Lathes, boring attachments to	Sept. 25, 1866.
58, 443	McBeth, James E	New Orleans, La	Gun-locks, safety	Oct. 2, 1866.
57, 533	McBride, James	Alleghany, Pa	Boiler heads, machinery for cutting oval holes in. (Antedated August 17, 1866.)	Aug. 28, 1866.
57, 534	Same	do	Boiler heads, machinery for cutting oval holes in. (Antedated August 17, 1866.)	Aug. 28, 1866.
2, 206	McBurney, Charles	Roxbury, Mass	Rubber, vulcanized, waste, utilizing. (Reissue)	Mar. 20, 1866.
53, 465	Same	do	Rolls, dressing, manufacture of	Mar. 27, 1866.
53, 643	Same	do	Rubber, hard, manufacture of	Apr. 3, 1866.
53, 999	McBurney, Charles, and James B. Forsyth	do	Rubber, India, tubes, &c., manufacture of	Apr. 17, 1866.
55, 776	McCaine, William, and David, assignors to selves and Daniel McCaine.	Groton, Mass	Tree protectors	June 19, 1866.
	McCabe, R. A., *et al.* (*See* Holliday, James G., assignor.)			
57, 535	McCalvey, James	Philadelphia, Pa	Hoisting machines	Aug. 28, 1866.
54, 573	McCambridge, Samuel	do	Car brakes	May 8, 1866.
58, 115	McCambridge, Samuel, and Edward G. Martin	do	Car brakes	Sept. 18, 1866.
52, 182	McCammon, Joseph	Dayton, Ohio	Barrel-head	Jan. 23, 1866.
58, 116	McCarthy, E. P	San Francisco, Cal	Ore and quartz crushers	Sept. 18, 1866.
59, 045	McCarty, Oliver C	Hayesville, Ohio	Gates	Oct. 23, 1866.
55, 136	McCauley, Reuben A	Baltimore, Md	Hydrants	May 29, 1866.
58, 444	McChesney, Reuben	Ilion, N. Y	Fire-arms, breech-loading	Oct. 2, 1866.
52, 585	McClanathan, J. B	Horicon, Wis	Bedstead, spring	Feb. 13, 1866.
55, 586	McClay, John, assignor to self and J. W. Bliss	Hartford, Conn	Piles, mode of driving	June 12, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,620	McCleary, Thomas	Blairsville, Pa	Fireplaces	Nov. 13, 1866.
58,857	McClelland, John	Washington, D. C	Washers, street	Oct. 16, 1866.
56,586	McClelland, Robert W	Springfield, Ill	Wagon hubs	July 24, 1866.
57,746	Same	do	Refrigerator for liquids	Sept. 4, 1866.
55,688	McCloskey, John	New York, N. Y	Sewing machines, button-hole	June 19, 1866.
53,848	McClure, George D	Denver Station, Ill	Stalk, corn, cutter	Apr. 10, 1866.
58,552	McClure, Henry, assignor to self and James Ellis	Terre Haute, Ind	Furnace and boilers	Oct. 2, 1866.
58,658	McClure, Jacob	Rockland, Maine	Augers, hollow	Oct. 9, 1866.
59,430	McCollum, Bernard	New York, N. Y	Window shutters. (Antedated October 27, 1866)	Nov. 6, 1866.
	McCollum, John	do	Cracker machines (Extension)	Mar. 22, 1866.
59,151	McComb, James J	England	Bales, cotton, applying and securing metal bands on	Oct. 23, 1866.
59,152	Same	do	Bale, cotton, ties	Oct. 23, 1866.
60,533	McConnaughey, B. A	New Market, Ohio	Vehicles, device for detaching horses from	Dec. 18, 1866.
57,747	McConnaughey, Thomas B	Newark, Del	Cultivators, guard-attachment for. (Antedated Aug. 28, 1866)	Sept. 4, 1866.
57,941	Same	do	Horse powers, governors for	Sept. 11, 1866.
60,218	Same	do	Planters, corn	Dec. 4, 1866.
58,858	McConnell, Robert	Lawrenceville, Pa	Bench, carpenter's	Oct. 16, 1866.
56,968	McCord, William	Sing Sing, N. Y	Rakes, horse	Aug. 7, 1866.
58,859	McCormick, M. J	New York, N. Y	Vault light	Oct. 16, 1866.
54,751	McCormick, William	Muscatine, Iowa	Cultivators	May 16, 1866.
54,574	McCoy, Francis	Lancaster, Pa	Vehicles, attaching thills to	May 8, 1866.
58,117	McCoy, William M	Bloomingdale, Ind	Work, rolled, while being stitched, device for holding	Sept. 18, 1866.
57,355	McCracken, James	Bloomfield, N. J	Fibre, engines for reducing rags, &c., to. (Antedated Aug. 8, '66)	Aug. 21, 1866.
58,659	McCrea, Cole	Leavenworth, Kansas	Pruning-knife	Oct. 9, 1866.
	McCreary, James. (*See* Sefton, Josiah W., assignor.)			
59,851	McCrellish, John	Philadelphia, Pa	Blacking	Nov. 20, 1866.
	McCrellish, J., *et al.* (*See* James, Thomas, assignor.)			
57,536	McCrum, James	Locust Grove, Ohio	Lathes, drilling attachment for turning	Aug. 28, 1866.
56,969	McCune, O. C	Darby Creek, Ohio	Planters, corn	Aug. 7, 1866.
58,860	Same	do	Press, wool	Oct. 16, 1866.
57,537	McCurdy, David	Ottawa, Ohio	Gates, farm	Aug. 28, 1866.
52,870	McCurdy, James S	Bridgeport, Conn	Sewing machines, guides for	Feb. 27, 1866.
53,743	McCurdy, James S., assignor to Elias Howe, jr	do	Sewing machines	Apr. 3, 1866.
57,942	McCutcheon, William R	Washington, Iowa	Churns	Sept. 11, 1866.
52,586	McDermott, John	Washington, D. C	Thill coupling	Feb. 13, 1866.
52,433	McDermott, John William	New York, N. Y	Bolt-heading machines	Feb. 6, 1866.
57,943	McDevitt, B	Belvidere, Ill	Railroad chair	Sept. 11, 1866.
55,689	McDonald, Alexander	Charlestown, Mass	Trunk, travelling	June 19, 1866.
53,020	McDonald, A. T	Dubuque, Iowa	Balances	Mar. 6, 1866.
60,028	McDonald, Curran E	Indianapolis, Ind	Dresses, ladies', apparatus for obtaining the measures for	Nov. 27, 1866.
57,442	McDonald, Donald, assignor to self, N. E. Sisson, and H. Q. Hawley.	Albany, N. Y	Air, apparatus for carburetting	Aug. 21, 1866.
2,153	McDonald, Hugh	Pittsburg, Pa	Furnaces, puddling, fix for (Reissue)	Jan. 23, 1866.
55,881	McDonald, James	Detroit, Mich	Carding machines	June 26, 1866.
58,274	McDonald, John	Hardin, Ill	Drills, grain	Sept. 25, 1866.

60,029	McDonald, John	Saratoga Springs, N. Y.	Brick-kilns	Nov. 27, 1866.
57,165	McDonald, Thomas	Roxbury, Mass.	Leather, stuffing and currying	Aug. 14, 1866.
58,731	McDonald, William, assignor to self, Donald McDonald, and Noel E. Sisson.	Albany, N. Y.	Gas-meter registers	Oct. 9, 1866.
59,431	McDonough, F.	Chicago, Ill.	Fasteners, door	Nov. 6, 1866.
60,400	McDonough, James W	do	Lounge, folding	Dec. 11, 1866.
52,305	McDonough, Thomas	Middletown, Conn	Air-engines, hot	Jan. 30, 1866.
60,219	McDougall, James T.	San Francisco, Cal.	Furnace	Dec. 4, 1866.
55,324	McDougall, S. T.	New York, N. Y.	Air, apparatus for carburetting	June 5, 1866.
52,306	McDowell, C. L.	Wassonville, Iowa	Looms, hand	Jan. 30, 1866.
53,091	McDowell, Daniel	Island of Jamaica, W. I.	Boilers, cleaning tubes of	Mar. 6, 1866.
	McElevain, H. S., *et al.* (*See* Hanson, J. A., assignor.)			
52,434	McFarland, Andrew	St. Johnsbury, Vt.	Sawing machines	Feb. 6, 1866.
53,320	McFarland, Josiah	Clinton, Ill	Lamp shades	Mar. 20, 1866.
58,118	Same	do	Blowpipes	Sept. 18, 1866.
56,146	McFarland, Luther W., assignor to Frederick S. Otis	Brooklyn, N. Y.	Skirts, clasps for the bottom hoops of	July 3, 1866.
59,621	McFarland, Robert W.	Monticello, Wis.	Gates, farm	Nov. 14, 1866.
57,166	McFishback, William, assignor to self and Erasmus Tucker	Union, Ohio	Harrows	Aug. 14, 1866.
56,076	McGaffey, Ives W.	Chicago, Ill.	Planters, seed	July 3, 1866.
56,430	Same	do	Planting cotton seed, machine for	July 17, 1866.
	McGarvey, Michael, and Jasper Van Wormer. (*See* Van Wormer & McGarvey.)			
58,861	McGeary, James	Salem, Mass.	Air, apparatus for carburetting	Oct. 16, 1866.
59,246	Same	do	Steam, method of decomposing	Oct. 30, 1866.
	McGhie, C., and Charles Brown. (*See* Brown & McGhie.)			
56,587	McGill, George W	Washington, D. C	Paper fastener, metallic	July 24, 1866.
54,382	McGill, John	Boston, Mass.	Solution to be applied to cotton, linen, and other fabrics to prevent them from burning.	May 1, 1866.
	McGill, John. (*See* Collen, John B., assignor.) Reissue.			
53,021	McGill, Sarah A.	Cincinnati, Ohio	Grater, vegetable	May 6, 1866.
52,729	McGill, William C.	do	Sifter, flour	Feb. 20, 1866.
53,644	Same	do	Sifter, flour	Apr. 3, 1866.
53,849	Same	do	Corn from the cob for table use, apparatus for stripping	Apr. 10, 1866.
54,383	Same	do	Locks	May 1, 1866.
54,575	Same	do	Sifter, flour	May 8, 1866.
53,022	McGill, W. C., and A. J. Gibson	do	Drilling and hoisting machine	Mar. 6, 1866.
56,588	McGillirae, James A	Dyer, Ind.	Presses	July 24, 1866.
57,538	McGlumphy, John S	Wind Ridge, Pa	Wagon brakes	Aug. 28, 1866.
	McGonigle, Joseph W. (*See* Walkinshaw, J. C., assignor.)			
52,183	McGonnigle, M.	Alleghany, Pa	Locks	Jan. 23, 1866.
55,515	McGrath, Bartholomew	Gloucester, Mass.	Masts, boom, connection for	June 12, 1866.
56,077	McGregor, W. W	Dedham, Mass	Looms, harness motion of	July 3, 1866.
	McIlvain, H., *et al.* (*See* Warner, William, assignor.)			
57,944	McInnes, John	Waverley, Ill.	Hame tug	Sept. 11, 1866.
	McIntire, J. N. (*See* De Forrest, T. B., assignor.)			
57,945	McIntire, Thomas	Portsmouth, Ohio	Cotton tie fastening	Sept. 11, 1866.
52,435	McIntire, William A	Troy, N. Y.	Caps, percussion, machine for varnishing and lining	Feb. 6, 1866.
	McIntyre, James, and Thomas Sinnott. (*See* Sinnott & McIntyre.)			
53,466	McIver, William B	Worcester, Mass	Planing machines	Mar. 27, 1866.
55,517	McKanna, David	Madison, Wis.	Planters, corn, hand	June 12, 1866.
	McKee and Brothers. (*See* Ballinger, Charles, assignor.) Design.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,660	McKee, Charles	San Francisco, Cal	Composition for removing incrustation from steam boilers	Oct. 9, 1866.
56,858	McKeen, Thomas Cato, assignor to New York Submarine Co	Irvington, N. J	Vessels, apparatus for buoying	July 31, 1866.
52,436	McKelvey, James	Buffalo, N. Y	Refrigerator	Feb. 6, 1866.
54,931	Same	Ogdensburg, N. Y	Refrigerator	May 22, 1866.
54,000	McKenney, Almeron	Maumee, Ohio	Grub and stump machine	Apr. 17, 1866.
54,432	McKinlay, Peter	Charleston, S. C	Rice, machine for cleaning	Nov. 6, 1866.
55,518	McKinley, B. F	Falmouth, Ky	Valves, cut-off, balance	June 12, 1866.
60,401	McKinlay, B. F., assignor to self and H. R. Mathias	Cincinnati, Ohio	Saw-mills, head-blocks for	Dec. 11, 1866.
57,748	McKinley, John	Bethesda, Ohio	Ploughs	Sept. 4, 1866.
58,862	McKinney, E	Clarksville, Tenn	Stoves, coal oil	Oct. 16, 1866.
59,046	McKinstry, J. A	Monson, Mass	Mitre-boxes	Oct. 23, 1866.
55,325	McKnight, J., and William S. Deisher	Reading, Pa	Motive power	June 5, 1866.
56,589	McKnight, Joseph	Pomeroy, Ohio	Harvester cutter sharpeners	July 24, 1866.
59,852	McLaren, James	Albany, N. Y	Wrenches	Nov. 20, 1866.
56,673	McLean, Charles, assignor to self, T. C. Hargraves, and Charles Mitchell.	Boston, Mass	Sugar and sirup, maple flavored	July 24, 1866.
59,801	McLean, Daniel H	Ilion, N. Y	Reels	Nov. 20, 1866.
	McLean, James, and Charles D. Young. (*See* Young & McLean.)			
59,918	McLean, James P., and John Vandercar, assignors to James P. McLean.	Brooklyn, N. Y	Piston rod packing	Nov. 20, 1866.
55,326	McLean, James W	Indianapolis, Ind	Latch, gate	June 5, 1866.
57,539	McLean, Ward	New York, N. Y	Lock, seal	Aug. 28, 1866.
51,899	McLean, William S., assignor to self and Volney Stockton	Williamsburg, Ohio	Pruning hooks	Jan. 2, 1866.
60,030	McLelland, James C., and James Graham	Pittsburg, Pa	Broom head	Nov. 27, 1866.
56,590	McLellen, John	Chambersburg, Pa	Buckles	July 24, 1866.
	McLeod, Charles A. (*See* Bussey, Esek, assignor.)			
	McLorinan, John. (*See* Haines, William H., assignor.) Same.			
59,433	McMahel, John	Hamilton, Ohio	Straw cutters	Nov. 6, 1866.
	McManama, E. D., *et al.* (*See* Shawcross, T. T., assignor.)			
58,350	McManus, Alonzo, assignor to North & Judd Manufacturing Company.	New Britain, Conn	Hooks, snap	Sept. 25, 1866.
55,327	McManus, Francis	Ellenburg Centre, N. Y	Registers, lumber	June 5, 1866.
58,119	McMeekin, F. M	Morrison's Mill, Fla	Ploughs	Sept. 18, 1866.
60,402	Same	do	Gins, cotton	Dec. 11, 1866.
59,802	McMillan, Eli, jr	Wilmington, Del	Churns	Nov. 20, 1866.
60,220	McMillen, William T	Cincinnati, Ohio	Fireplace	Dec. 4, 1866.
56,591	McMillen, William T., and Edward P. Conrick	do / Delavan, Wis	Clothes wringers	July 24, 1866.
52,730	McMillen, John S	Pittsburg, Pa	Capstan by steam, mode of working a	Feb. 20, 1866.
60,031	McMullen, A	Sterling, Ill	Hame tug and breast collar	Nov. 27, 1866.
58,275	McMurtry, John	Lexington, Ky	Steam generators	Sept. 25, 1866.
58,445	Same	do	Bales, cotton, tie for	Oct. 2, 1866.
54,752	McNair, A. R	New York, N. Y	Brick machine	May 15, 1866.
54,576	McNamara, Stephen	Chicago, Ill	Washing machine	May 8, 1866.

	McNeil, John, *et al.* (*See* Irving, McNeil, Rich & Fay.)			
59,853	McNeill, Thomas E., assignor to self and William D. Miller	Lynchburg, Va	Press, cotton	Nov. 20, 1866.
	McNiell, E., *et al.* (*See* Lyons, James B., assignor.)			
	Same.			
55,777	McNulty, John C., assignor to self and Thomas Lee	San Francisco, Cal	Burning gas, method of	June 19, 1866.
56,243	McOmber, Abner	Schenectady, N. Y	Limbs, artificial	July 10, 1866.
	McQuade, James. (*See* Marchbank, John, assignor.)			
56,970	McQuaid, Preston	Wenona, Ill	Planting, machine for marking ground for	Aug. 7, 1866.
52,731	McQuead, Joseph	Mount Sterling, Ill	Wagon brake	Feb. 20, 1866.
59,919	McQuirk, Thomas, and Oren Cole	Millville, Mass	Carding engines	Nov. 20, 1866.
53,645	McRoberts, John	New Orleans, La	Soap moulds	Apr. 3, 1866.
53,162	McVay, John	Columbia, Ohio	Roofing	Mar. 13, 1866.
	McVean, Alexander, *et al.* (*See* Baker, Haydn M., assignor.)			
	Same. (*See* Jones and Farquharson, assignors.)			
	McVean, Alexander, and A. M. Hastings. (*See* Baker, Haydn M., assignor.)			
55,328	McWilliams, John	Pittsburg, Pa	Gas generator	June 5, 1866.
	Mead, Beverley E., and George Jones. (*See* Jones & Mead.)			
59,854	Mead, Charles V	Hamilton, N. J	Rubber, machine for rolling	Nov. 20, 1866.
	Same. (*See* Valentine & Longton, assignors.)			
57,946	Mead, Horace D	Wayne, N. Y	Gates, farm	Sept. 11, 1866.
52,307	Mead, Marvin	Augusta, Mich	Shaft coupling	Jan. 30, 1866.
53,023	Mead, William S	New York, N. Y	Journals and boxes	May 8, 1866.
52,308	Meader, George	Ottawa, Ill	Propeller	Jan. 30, 1866.
53,646	Meany, James A	Brooklyn, N. Y	Bleaching stained cotton	Apr. 3, 1866.
58,863	Mearns, James H	Philadelphia, Pa	Furnaces	Oct. 16, 1866.
60,403	Mears, J. H., and C. W. Yale	Oshkosh, Wis	Joints, knuckle	Dec. 11, 1866.
51,850	Medbury, Charles, and Thomas Wyatt	Providence, R. I	Ploughs, railroad	Jan. 2, 1866.
57,267	Medhurst, John	England	Sails, apparatus for reefing and furling	Aug. 14, 1866.
54,932	Meech, Harrison B	Fort Edward, N. Y	Paper pulp, manufacture of	May 22, 1866.
56,971	Same	do.	Pulp, process for the reduction of fibrous substances to a	Aug. 7, 1866.
57,947	Same	do.	Packing straw into boilers, apparatus for	Sept. 11, 1866.
59,247	Same	do.	Preserving meat, process for	Oct. 30, 1866.
	Meech, Harrison B., and Joel Tiffany. (*See* Tiffany & Meech.)			
53,163	Meek, Joseph L	New York, N. Y	Hair, ladies', instruments for parting	Mar. 13, 1866.
2,394	Meeker, George H., assignor to Lacey, Meeker & Co	do.	Saddles, riding (Reissue)	Nov. 13, 1866.
55,882	Meeker, J. J., and Levi Cortwright	Columbia county, Pa	Gates for forebays	June 26, 1866.
	Meert, Fritz. (*See* Le Boulengé, Paul, assignor.)			
	Mefford, David M., *et al.* (*See* Smith, Addison, assignor.)			
57,256	Meglone, Whitney W., assignor to self and L. Stedman	Nashville, Tenn	Fluids effervescing from bottles, instrument for removing	Aug. 14, 1866.
54,933	Meigs, Josiah V	Washington, D. C	Coffee, apparatus for making	May 22, 1866.
54,934	Same	do.	Fire-arms, breech-loading	May 22, 1866.
55,690	Meily, S. S	Lebanon, Pa	Buggy tops, shifting	June 19, 1866.
57,540	Mein, George	Williamsburg, N. Y	Banjos	Aug. 28, 1866.
58,864	Meius, W. R	Boston, Mass	Centrifugal machines, apparatus for supplying liquor to	Oct. 16, 1866.
	Melcher, James, *et al.* (*See* Allen, Rouse & Melcher.)			
57,541	Melick, James H	Albany, N. Y	Threshing machines	Aug. 28, 1866.
52,437	Mellen, Dustin F	New York, N. Y	Wells, oil and other, grab for	Feb. 6, 1866.
53,647	Same	do.	Screws, wood, machinery for shaving. (Antedated March 14, 1866.)	Apr. 3, 1866.
53,648	Same	do.	Screws, machine for nicking. (Antedated March 21, 1866)	Apr. 3, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,188	Mellen, Dustin F	New York, N. Y	Screw blanks, machinery for threading. (Antedated April 13, 1866.)	Apr. 24, 1866.
58,446	Same	do	Screw blanks, device for griping	Oct. 2, 1866.
57,749	Mellen, G. H., and J. C. Hazleton	Washington, D. C	Fluid, burning	Sept. 4, 1866.
59,920	Mellinger, Christian K	Manor Township, Pa	Carriages, shifting seats for	Nov. 20, 1866.
60,032	Mellinger, Melchor	Dayton, Ohio	Stoves, foot	Nov. 27, 1866.
56,972	Mellinger, S., jr	Mount Pleasant, Pa	Fruit gatherers	Aug. 7, 1866.
58,447	Mellon, Edward	Scranton, Pa	Tires to wheels of locomotives, mode of attaching	Oct. 2, 1866.
53,164	Melone, Charles	Lawrence, Kansas	Traps, animal	Mar. 13, 1866.
54,577	Melone, T. L	Granville, Ohio	Sewing machines	May 8, 1866.
51,851	Melville, William	Detroit, Mich	Sawing machines	Jan. 2, 1866.
58,865	Mendenhall, Daniel	Fairfield, Iowa	Looms, hand	Oct. 16, 1866.
58,866	Same	do	Tree protector	Oct. 16, 1866.
57,750	Mendenhall, Jacob H	Cerro Gordo, Ind	Churns	Sept. 4, 1866.
	Mendenhall, Stephen C	Richmond, Ind	Looms, mode of throwing shuttles in (Extension)	Nov. 6, 1866.
	Mendenhall, Stephen C., and Obed and Ezra King	do / Salem, Iowa	Looms, hand (Extension)	Nov. 6, 1866.
59,132	Mendenhall, Stephen C., and Simon Sparks, assignors to Stephen C. Mendenhall.	Richmond, Ind	Looms, hand	Oct. 23, 1866.
2,218	Mennel, Anton	New York, N. Y	Limbs, artificial (Reissue)	Apr. 3, 1866.
54,384	Mentz, Edward	Philadelphia, Pa	Curtain fixtures	May 1, 1866.
53,229	Mercer, Charles and David, assignors to Blymyer, Bates & Day	Strickersville, Pa	Evaporator	Mar. 13, 1866.
58,276	Merchant, George W	La Porte, Ind	Beehives	Sept. 25, 1866.
56,773	Mercier, Ariadna B	Providence, R. I	Clothes washer	July 31, 1866.
	Meriden Manufacturing Company. (*See* Miller, Wm. H., assignor.)			
56,973	Merkel, James	Mount Pleasant, Iowa	Paddle wheel	Aug. 7, 1866.
59,855	Merkel, Peter	St. Louis, Mo	Ploughs, gang	Nov. 20, 1866.
52,732	Merkel, Frederick	New York, N. Y	Shoes	Feb. 20, 1866.
51,956	Merlett, John	Bound Brook, N. J	Cars, pneumatic springs for. (Antedated December 28, 1865)	Jan. 9, 1866.
53,850	Mero, Anthony	New Haven, Mich	Harrows	Apr. 10, 1866.
54,189	Merriam, David H	Fitchburg, Mass	Knife handles	Apr. 24, 1866.
	Merriam, J. B. (*See* Morehouse, C. L., assignor.)			
56,244	Merriam, J. C., and W. N. Weeden	Boston, Mass	Press, embossing	July 10, 1866.
55,329	Merriam, M. H., and E. L. Norton	Charlestown, Mass	Shoe binding, manufacture of	June 5, 1866.
55,330	Same	do	Slitting machine	June 5, 1866.
55,331	Same	do	Sorting machine	June 5, 1866.
55,332	Same	do	Winding shoe binding, tape, &c., machine for	June 5, 1866.
55,333	Same	do	Hides, apparatus for drying	June 5, 1866.
55,334	Same	do	Gluing press	June 5, 1866.
55,335	Same	do	Gluing and cementing machine	June 5, 1866.
55,336	Same	do	Cutting machine	June 5, 1866.
58,661	Merriam, Scovil S	Springfield, Mass	Boats, submarine and torpedo	Oct. 9, 1866.
58,448	Merrick, S	New Brighton, Pa	Cars, railroad, iron, construction of	Oct. 2, 1866.
56,592	Merriel, William M	Jefferson, Ind	Fastenings, sash	July 24, 1866.
	Merrihew, P. E. (*See* Tarr, John B., assignor.)			

	Merrill, G. D. (*See* Van Vleck & Nichols, assignors.)			
59,434	Merrill, Helem	Brooklyn, N. Y	Spikes	Nov. 6, 1866.
55,137	Merrill, Joshua	Boston, Mass	Casks, barrels, and kegs, manufacture of	May 29, 1866.
58,449	Same	do	Casks, barrels, &c	Oct. 2, 1866.
58,450	Same	do	Casks, barrels, &c	Oct. 2, 1866.
58,451	Same	do	Casks, barrels, and kegs	Oct. 2, 1866.
58,452	Same	do	Barrels and kegs	Oct. 2, 1866.
59,622	Same	do	Casks, barrels, &c	Nov. 13, 1866.
54,935	Merrill, Rufus S	do	Lamps	May 22, 1866.
56,245	Same	do	Lamp burners	July 10, 1866.
56,974	Same	do	Lamps	Aug. 7, 1866.
	Merrill, Rufus S., *et al.* (*See* Norris, Daniel G., assignor.)			
54,385	Merrill, Seth W	Assabet, Mass	Window blinds	May 1, 1866.
	Merriman, A. T., *et al.* (*See* Taggart, J., assignor.) Reissue.			
59,856	Merriman, Andrews T., and Thomas Ross, assignors to selves, J. B. Reynolds, and R. Berrett.		Stones, machine for channelling	Nov. 20, 1866.
2,423	Merriman, John A	Chicago, Ill	Screws, machine for cutting (Reissue)	Dec. 18, 1866.
59,623	Merritt, Benjamin, jr., assignor to American Tree Protector Company.	Newton, Mass	Tree protectors	Nov. 13, 1866.
53,851	Merritt, Isaac H	Cincinnati, Ohio	Bale, cotton, tie	Apr. 10, 1866.
53,024	Merritt, J. C	Wyoming, N. Y	Stove-pipe damper	Mar. 6, 1866.
56,674	Merritt, James M., assignor to self and John W. A. Meyer	Buffalo, N. Y	Stencil-numbering apparatus	July 24, 1866.
52,871	Merritt, Joseph E	Winn, Maine	Leather, machine for rolling up	Feb. 27, 1866.
58,867	Merritt, S. F	New York, N. Y	Eye-glass suspenders	Oct. 16, 1866.
59,047	Merry, C. H	Dunleith, Ill	Grain from vessels, discharging	Oct. 24, 1866.
2,259	Merry, Thomas, assignor to Samuel Needham	Philadelphia, Pa	Fabric trimming (Design)	Feb. 6, 1866.
2,260	Same	do	Fabric trimming (Design)	Feb. 6, 1866.
2,261	Same	do	Fabric trimming (Design)	Feb. 6, 1866.
2,262	Same	do	Fabric trimming (Design)	Feb. 6, 1866.
54,190	Mersereau, William T	Newark, N. J	Bag frame	Apr. 24, 1866.
59,921	Same	do	Stair-rod fastening	Nov. 20, 1866.
	Mersereau, W. T. and I. (*See* Shipley, Amos, assignor.)			
55,138	Mershon, Albert H	Philadelphia, Pa	Furnaces, mode of regulating the draught of	May 29, 1866.
53,852	Mershon, Granderson	Brookville, Iowa	Medical compound	Apr. 10, 1866.
58,453	Merwin, Charles S., and Charles A. Metcalf	Dubuque, Iowa	Warmer, foot, and reflecting lamp, combined	Oct. 2, 1866.
	Merwin, Joseph, and Edward R. Bray. (*See* Bourderaux, Pierre, assignor.)			
58,454	Merwin, Samuel	Springfield, Mass	Paste, prepared	Oct. 2, 1866.
52,733	Meschutt, James M	New York, N. Y	Washing machine. (Antedated February 9, 1866)	Feb. 20, 1866.
2,257	Meservey, Henry L	Boston, Mass	Sifter, flour (Design)	Jan. 30, 1866.
53,321	Same	do	Washboard	Mar. 20, 1866.
	Mesnard, G. H., *et al.* (*See* Bailly, Durand, Mesnard & Porier.)			
55,773	Messenger, A. C., assignor to self and A. P. Smith	Syracuse, N. Y	Air, gas, &c., apparatus for carburetting	June 19, 1866.
55,519	Messenger, Charles	Chicago, Ill	Broom head	June 12, 1866.
60,221	Same	do	Broom head	Dec. 4, 1866.
55,139	Messinger, William S	Roxbury, Mass	Croquet, parlor, apparatus for	May 29, 1866.
	Metcalf, Charles A., and Charles S. Merwin. (*See* Merwin & Metcalf.)			
	Metropolitan Washing Machine Company. (*See* Pease, James N., assignor.)			
	Same. (*See* Pease & Lewis, assignors.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,732	Metten, George R., assignor to Horace Baldwin	St. Louis, Mo	Pen, fountain	Oct. 9, 1866.
53,853	Metz, Frederick	Lyons, N. Y	Bed-bottom connections	Apr. 10, 1866.
58,277	Metz, S. P., and Martin Rohrer	McDonaldsville, Ohio	Planters, corn	Sept. 25, 1866.
58,120	Metzendorf, John	New York, N. Y	Pockets, safety-attachments for	Sept. 18, 1866.
53,165	Meucci, Antonio	Clifton, N. Y	Paper, pulp from wood, process for making	Mar. 13, 1866.
2,285	Meyer, Charles T	Bergen, N. J	Floor oil-cloth (Design)	Mar. 27, 1866.
2,441	Meyer, Charles T., assignor to Edward C. Sampson	do	Floor oil-cloth pattern (Design)	Sept. 25, 1866.
2,442	Same	do	Floor oil-cloth pattern (Design)	Sept. 25, 1866.
2,443	Same	do	Floor oil-cloth pattern (Design)	Sept. 25, 1866.
2,444	Same	do	Floor oil-cloth pattern (Design)	Sept. 25, 1866.
2,495	Same	do	Floor oil-cloth pattern (Design)	Oct. 23, 1866.
	Meyer, E. L., and Elihu Spencer. (*See* Spencer & Meyer.)			
	Meyer, Gustavus. (*See* Dreseher, Louis, assignor.)			
	Meyer, Isaac T., and J. F. J. Gunning. (*See* Gunning & Meyer.)			
58,121	Meyer, Jacques	Williamsburg, N. Y	Saddles	Sept. 18, 1866.
	Meyer, J., *et al.* (*See* Rosenthal, Theodor, assignor.)			
	Meyer, John W. A. (*See* Merritt, James M., assignor.)			
56,431	Meyers, Henry, and A. Webb	Hyde Park, Pa / Scranton, Pa	Barrels, extracting bungs from	July 17, 1866.
58,122	Meyrose, F	St. Louis, Mo	Lanterns	Sept. 18, 1866.
57,542	Michaels, E	Palermo, Maine	Splitting bark upon trees, tools for	Aug. 28, 1866.
53,467	Michel, Jacob	Rochester, N. Y	Pumps	Mar. 27, 1866.
58,328	Michelet, Gustave	Belgium	Wool, method of scouring	Sept. 25, 1866.
58,192	Miekey, John R	Chicago, Ill	Churns	Sept. 18, 1866.
58,662	Middleton, Edward	Cleveland, Ohio	Alarm, fire and burglar	Oct. 9, 1866.
	Middleton, William A., *et al.* (*See* Hammer, Geo. H., assignor.)			
56,859	Middleton, William A., assignor to self, David J. Brougher, and George H. Hammer.	Harrisburg, Pa	Broom head	July 31, 1866.
	Middletown Tool Company. (*See* Henshaw, J. R., assignor.) Reissue.			
58,868	Mietzsch, Charles F	Philadelphia, Pa	Filters	Oct. 16, 1866.
53,025	Mignault, John B	Chelsea, Mass	File blanks, machine for rolling	Mar. 6, 1866.
57,543	Mihan, Patrick	Boston, Mass	Air, apparatus for carburetting	Aug. 28, 1866.
52,734	Milbank, Isaac M	Greenfield Hill, Conn	Fire-arms, breech-loading	Feb. 20, 1866.
55,520	Same	do	Fire-arms, breech-loading	June 12, 1866.
57,751	Milburn, Nathan L	St. Louis, Mo	Ordnance, revolving	Sept. 4, 1866.
52,872	Mildrum, Willis W., assignor to J. and E. Stevens & Co	East Berlin, Conn	Toy engine and whistle, combined	Feb. 27, 1866.
2,471	Miles, A	Winona, Minn	Label (Design)	Sept. 25, 1866.
59,048	Miles, A. O	Nashua, N. H	Locks	Oct. 23, 1866.
56,593	Miles, Isaac L	Charlestown, Mass	Printing on bottles, apparatus for	July 24, 1866.
56,246	Miles, James W	Hubbardston, Mich	Mills, grinding	July 10, 1866.
54,001	Miles, Oren E., assignor to David B. Turnbull	Aurora, Ill	Wagons	Apr. 17, 1866.
59,922	Miles, Oren E., assignor to self and William B. Sigley	do	Vehicles, wheeled, bolster-plate for	Nov. 20, 1866.
	Miles, Purches. (*See* Weeks, John J., assignor.) Reissue.			
58,455	Miles, Wallace A	Meriden, Conn	Spice-box	Oct. 2, 1866.

56,078	Milks, Charles R	Waterford, N. Y	Composition for coating ships	July 3, 1866.
53,649	Millar, Charles	Utica, N. Y	Cans, milk, &c., handle for	Apr. 3, 1866.
54,002	Millar, William J	McKeesport, Pa	Rudder for steering vessels	Apr. 17, 1866.
59,049	Miller, Adam	Chicago, Ill	Plough mould	Oct. 23, 1866.
	Miller, A., and F. Raymond. (*See* Raymond & Miller.)			
	Miller, Allen C., *et al.* (*See* Donaldson, Sheets & Miller.)			
54,578	Miller, Benjamin F	New York, N. Y	Washing machine	May 8, 1866.
56,774	Same	....do	Stove-pipe drum	July 31, 1866.
56,775	Same	....do	Stove-pipe dampers	Aug. 7, 1866.
56,976	Miller, Charles	St. Louis, Mo	Looms, harness motion for	Aug. 7, 1866.
58,456	Miller, David R	Harrisburg, Pa	Planing and sawing machine, dust and shaving conveyers for	Oct. 2, 1866.
58,869	Miller, David T	Dayton, Ohio	Sorghum evaporator	Oct. 16, 1866.
	Miller, Edward. (*See* Marcy, John J., assignor.)			
	Same. (Reissue.)			
	Miller, E., *et al.* (*See* Sargent, Sumner, assignor.) Reissue.			
	Miller, Elias, and I. M. Wallis. (*See* Wallis & Miller.)			
59,857	Miller, Erasmus D	Dorchester, Mass	Cranberry gatherer	Nov. 20, 1866.
56,594	Miller, Ezra	Brooklyn, N. Y	Cars, railroad	July 24, 1866.
57,356	Miller, Frederick	Newark, N. J	Bottles, stoppers for	Aug. 21, 1866.
53,540	Miller, Frederick J., assignor to William J. Miller	Brooklyn, N. Y	Bottles, liquor and other, frames for securing	Mar. 27, 1866.
53,650	Miller, George	New York, N. Y	Files, machines for cutting	Apr. 3, 1866.
57,443	Miller, George, and John Reichert, assignors to J. Reichert and D. Rottkamp.	....do	Billiard game-keeper	Aug. 21, 1866.
60,033	Miller, George W	Springfield, Mass	Breeching hooks	Nov. 27, 1866.
	Miller, H. E., *et al.* (*See* Temple, James, assignor.)			
55,140	Miller, Henry W	Utica, N. Y	Cheese hoops	May 29, 1866.
53,556	Miller, Jacob	Canton, Ohio	Harvesters, droppers for	Mar. 27, 1866.
52,253	Miller, James	Upton, Canada East	Extracts, apparatus for making	Jan. 23, 1866.
	Miller, James, and F. Ramsey. (*See* Ramsey & Miller.)			
	Miller, J. H., and Powell Griscom. (*See* Griscom & Miller.)			
54,936	Miller, James Madison	Greenwood Township, Pa	Hay wagons, loading attachment	May 22, 1866.
60,222	Miller, I. M	New York, N. Y	Engine, steam, condensers	Dec. 4, 1866.
55,141	Miller, John	Russellville, Ky	Washing machine	May 29, 1866.
55,142	Same	....do	Seeder and cultivator, combined	May 29, 1866.
	Miller, John. (*See* Kendig, Amor D., assignor.)			
53,854	Miller, John C	Louisville, Ky	Saddle-spring	Apr. 10, 1866.
54,937	Miller, John C	Amsterdam, N. Y	Water-wheels	May 22, 1866.
60,404	Miller, John M	Hamilton, Ohio	Mills, grinding	Dec. 11, 1866.
	Miller, John P., and John Steiner. (*See* Steiner & Miller.)			
58,663	Miller, Jonathan S	Everton, Ind	Vehicles, attaching thills or tongues to	Oct. 9, 1866.
52,873	Miller, Joseph	Boston, Mass	Sweeping machine, street	Feb. 27, 1866.
60,405	Miller, L. H	Baltimore, Md	Safes	Dec. 11, 1866.
60,534	Miller, Leonard H	Ottawa, Ohio	Type case	Dec. 18, 1866.
56,977	Miller, M. V., and George Henry	Manchester, Pa / Steubenville, Ohio	Axle box	Aug. 7, 1866.
60,535	Miller, Oliver, assignor to self and Thomas D. Ball	Salem, Ohio	Pumps	Dec. 18, 1866.
	Miller, P. S. (*See* Baker, D. B., assignor.)			
	Miller, P. S., and D. B. Baker. (*See* Baker & Miller.)			
2,511	Miller, Reuben	Lincoln, Ill	Monument, cemetery (Design)	Nov. 27, 1866.
57,544	Miller, Richard S	Battle Creek, Mich	Stove-pipe dampers	Aug. 28, 1866.
60,536	Miller, Robert R., and A. W. Carver, assignors to B. Hoopes and C. Borie.	Philadelphia, Pa	Stones, sharpening, composition for making. (Antedated December 5, 1866.)	Dec. 18, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,123	Miller S	Urbana, Ohio	Plane edge	Sept. 18, 1866.
59,435	Miller, Samuel M	Beaver Mill, Pa	Mills, grinding	Nov. 6, 1866.
53,166	Miller, Thomas D	Kankakee, Ill	Pockets, pencil	Mar. 13, 1866.
56,978	Miller, T. H	Allentown, Pa	Liquors, apparatus for cooling	Aug. 7, 1866.
	Miller, T. W., and H. J. (*See* Capron & Winchell, assignors.)			
55,337	Miller, W. D	Enon, Ohio	Diggers, potato	June 5, 1866.
59,050	Miller, W. H	Brandenburg, Ky	Rake and spade, combined	Oct. 23, 1866.
56,775	Miller, Warren P	San Francisco, Cal	Lamps, attaching burners to	July 31, 1866.
57,948	Same	....do	Bottle valves	Sept. 11, 1866.
58,664	Same	....do	Saws	Oct. 9, 1866.
	Miller, William D. (*See* McNeill, Thomas E., assignor.)			
59,723	Miller, William H., assignor to Meriden Manufacturing Company	West Meriden, Conn	Fire-arms, breech-loading	Nov. 13, 1866.
2,266	Miller, William K	Canton, Ohio	Harvesters.....(Division A, reissue)	June 5, 1866.
2,267	Same	....do	Harvesters.....(Division B, reissue)	June 5, 1866.
2,268	Same	....do	Harvesters.....(Division D, reissue)	June 5, 1866.
2,269	Same	....do	Harvesters.....(Division E, reissue)	June 5, 1866.
2,270	Same	....do	Harvesters.....(Division F, reissue)	June 5, 1866.
2,294	Same	....do	Harvesters.....(Division A, reissue)	June 26, 1866.
2,295	Same	....do	Harvesters.....(Division B reissue)	June 26, 1866.
2,296	Same	....do	Harvesters.....(Division C, reissue)	June 26, 1866.
57,545	Same	....do	Burial cases	Aug. 28, 1866.
	Millica, French, and Joseph Widman. (*See* Widman & Millica.)			
53,230	Milligan, John F., assignor to self and Richard Branch	St. Louis, Mo	Bale hooks, fastening for	Mar. 13, 1866.
59,512	Milligan, John F., assignor to J. W. Branch and J. Crooks	....do	Cotton ties	Nov. 6, 1866.
53,651	Milligan, Patrick Francis	Washington, D. C	Signal, railway	Apr. 3, 1866.
	Milliken, G. F., and M. G. Farmer. (*See* Farmer & Milliken.)			
53,167	Millochan, Adolph	New York, N. Y	Petroleum, distillation of	Mar. 13. 1866.
58,553	Millochan, Adolph, assignor to the American Retort Company	....do	Gas, illuminating, manufacture of	Oct. 2, 1866.
60,537	Millochan, Adolph, assignor to the American Improved Gas Retort Company.	....do	Gas, illuminating, retorts for the manufacture of	Dec. 18, 1866.
57,831	Millot, Pierre François	France	Water-wheel	Sept. 4, 1866.
	Mills, Benjamin T., and S. L. Crockett. (*See* Crockett & Mills.)			
2,155	Mills, O. W., assignor to Nelson Palmer	Hudson, N. Y	Threshing machine.....(Reissue)	Jan. 23, 1866.
52,184	Mills, Stephen G	Des Moines, Iowa	Cultivators	Jan. 23, 1866.
	Mills, Thomas, and Brother. (*See* Schulze, Leonhard, assignor.)			
	Design.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Mills, Thomas and George M. (*See* Wathew, Henry, assignor.)			
	Same.			

54,469	Millward, Frank, assignor to self and Thomas H. Foulds	Cincinnati, Ohio	Steam and water motor, combined	May 1, 1866.
	Millward, F., and G. H. Knight. (*See* Knight & Millward.)			
59,724	Milne, William B., assignor to self and William Brophy	Chicago, Ill	Soap, manufacture of	Nov. 13, 1866.
52,874	Milsom, George	Buffalo, N. Y	Tackle block	Feb. 27, 1866.
54,579	Miner, Isaac and D. J	Freehold, N. J	Water-wheels	May 8, 1866.
55,143	Miner, Jacob G	Morrisania, N. Y	Lamps, street	May 29, 1866.
53,322	Miner, Thomas H., and Samuel Heavenridge	Greenfield, Ind	Ploughs, cultivator	Mar. 20, 1866.
55,587	Mingay, Edward, assignor to the Boston and Maine Foundry Co.	Boston, Mass	Stoves, cooking, ash sifting device for	June 12, 1866.
54,648	Minich, Jacob K., assignor to self and Jacob R. Hoffer	Mount Joy, Pa	Harrow and cultivator combined. (Antedated September 25, 1865.)	May 8, 1866.
59,858	Minness, Thomas S	Meadville, Pa	Car coupling	Nov. 20, 1866.
59,248	Minor, David M	Bridgewater, Mich	Barndoors, fastening for	Oct. 30, 1866.
51,957	Minor, J. A	Middletown, Conn	Lunch box, folding	Jan. 9, 1866.
56,776	Same	do	Tablet, pocket. (Antedated July 19, 1866)	July 31, 1866.
56,247	Minter, James	Lowell, Mass	Bolt-heading machine	July 10, 1866.
52,875	Minthorn, Daniel	New York, N. Y	Ores, desulphurizing and disintegrating	Feb. 27, 1866.
55,521	Minton, Henry	Brooklyn, N. Y	Vaccinators	June 12, 1866.
56,079	Mirick, T. W	Boston, Mass	Bottle stopper	July 3, 1866.
52,185	Mitchell, Alexander	Fredericton, N. Brunswick	Washing machine	Jan. 23, 1866.
	Mitchell, A., *et al.* (*See* Rehfuss, George, assignor.)			
	Mitchell, Charles, *et al.* (*See* McLean, Charles, assignor.)			
56,777	Mitchell, David A	Chicago, Ill	Bridges	July 31, 1866.
56,248	Mitchell, George A	Turner, Maine	Pockets, safety	July 10, 1866.
	Mitchell, George E. (*See* Hallowell, Albert, assignor.)			
51,852	Mitchell, George W	St. Louis, Mo	Lamps	Jan. 2, 1866.
	Mitchell, Henry G., *et al.* (*See* Ackland, Mitchell & Mustapha.)			
56,324	Mitchell, John B., assignor to self and C. M. Plummer	Portland, Maine	Hose couplings	July 10, 1866.
	Mitchell, Robert, and James Alfred Shipton. (*See* Shipton & Mitchell.)			
55,883	Mitchell, S. H	El Paso, Ill	Fence	June 26, 1866.
56,778	Mitchell, Thomas	Albany, N. Y	Steam generators	Oct. 30, 1866.
59,051	Same	do	Steam generators	Oct. 23, 1866.
56,432	Mitchell, Thomas S	Pittsburg, Pa	Railroad switch	July 7, 1866.
	Mitchell, Vance & Co. (*See* Travis, James F., assignor.) Design.			
	Same. (*See* Vance & Smith, assignors.)			
	Same. (*See* Smith, Edgar M., assignor.)			
58,278	Mix, E. M. and J. E	Westfield, N. Y	Padlocks	Sept. 25, 1866.
2,249	Mix, G. I	Wallingford, Conn	Spoon handle (Design)	Jan. 30, 1866.
2,328	Same	do	Spoon or fork handle (Design)	May 29, 1866.
58,665	Same	do	Spoons, manufacture of	Oct. 9, 1866.
52,064	Mizner, J. K	Detroit, Mich	Cavalry accoutrements	Jan. 16, 1866.
60,034	Same	do	Knapsacks	Nov. 27, 1866.
57,167	Moeller, Charles F	Newark, N. J	Lanterns	Aug. 14, 1866.
57,546	Moeller, Jacob E	Terre Haute, Ind	Water elevators	Aug. 28, 1866.
2,161	Moeser, Henry	Pittsburg, Pa	Printing names of subscribers upon newspapers, &c. (Reissue)	Jan. 30, 1866.
53,168	Moffatt, Arthur	Washington, D. C	Cartridge priming	Mar. 13, 1866.
55,339	Same	do	Peat machine	June 5, 1866.
	Same. (*See* Munson, Albert L., assignor.)			
	Moffitt, John R	Chelsea, Mass	Separators, grain (Extension)	Nov. 24, 1866.
58,870	Moffitt, J. R., and F. D. Hayward	do / Malden, Mass	Rubber articles, method of protecting	Oct. 16, 1866.
54,386	Mohr, Frederick	Fond-du-Lac, Wis	Table, folding	May 1, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
57,168	Moller, C. F., and C. Latham Sholes	Milwaukee, Wis	Brush, shoe	Aug. 14, 1866.
53,761	Moller, Peter C., assignor to J. T. Romeninger	Saxony	Steam generators	Apr. 3, 1866.
	Molvaut, H. C. T., and Charles J. M. Sohet. (*See* Sohet & Molvaut.)			
56,080	Monagham, R. E	West Chester, Pa	Fastenings, sash	July 3, 1866.
60,538	Monfort, John, assignor to self and G. E. Billingsley	Jessamine county, Ky	Composition for the cure of ague	Dec. 18, 1866.
59,436	Monk, W. D	Williamsburg, N. Y	Hemp, flax, &c., curing	Nov. 6, 1866.
59,624	Monroe, Alexander	Watkins, N. Y	Stump extractor	Nov. 13, 1866.
54,003	Monroe, Freedom	Bruce, Mich	Land leveller	Apr. 17, 1866.
54,004	Same	....do	Bridges	Apr. 17, 1866.
	Monroe, James F. (*See* Browne, John D., assignor.) Reissue.			
58,351	Monroe, Joshua, assignor to self and Jetur Gardiner	New York, N. Y	Limbs, artificial	Sept. 25, 1866.
53,169	Montague, Charles	Hartford, Conn	Paper-cutting machine	Mar. 13, 1866.
57,357	Montgomery, George	Canton, Ill	Medicine	Aug. 21, 1866.
57,753	Montgomery, Joseph	Harrisburg, Pa	Axle box	May 15, 1866.
52,186	Montgomery, I. A	Williamsburg, Pa	Hay forks	Jan. 23, 1866.
54,580	Montgomery, Mary Jane	New York, N. Y	Metals, corrugated, apparatus for punching	May 8, 1866.
56,779	Montgomery, Richard	....do	Metallic plates, corrugated	July 31, 1866.
57,358	Same	....do	Grate bars	Aug. 21, 1866.
57,359	Same	....do	Ships, construction of	Aug. 21, 1866.
57,949	Same	....do	Railroad, aerial	Sept. 11, 1866.
2,243	Montgomery, Richard, assignor through mesne assignments to Mary Jane Montgomery.	....do	Ships, iron.....(Division A, reissue)	May 15, 1866.
2,244	Same	....do	Ships, iron.....(Division B, reissue)	May 15, 1866.
59,133	Montignarie, John O., assignor to A. Turner	Albany, N. Y	Rack, clothes	Oct. 23, 1866.
54,754	Montrose, E. D	Nashua, Iowa	Fence, portable	May 15, 1866.
52,375	Moody, Granville	Piqua, Ohio	Fireplaces	Jan. 30, 1866.
56,979	Moody, G., and W. P. Hall	....do	Stove, heating	Aug. 7, 1866.
53,652	Moody, Henry C	Fulton, N. Y	Washing machine	Apr. 3, 1866.
55,144	Moody, Henry T	Newburyport, Mass	Augers	May 29, 1866.
53,026	Moody, John B	Cincinnati, Ohio	Ordnance, breech-loading	Mar. 6, 1866.
2,165	Moody, Sarah A	New York, N. Y	Supporters, abdominal.....(Reissue)	Jan. 3, 1866.
57,950	Same	....do	Dress elevators, ladies'	Sept. 25, 1866.
58,951	Moody, Silas A., assignor to Philip E. Devine	San Francisco, Cal	Sod cutters	Oct. 16, 1866.
52,735	Moon, Allen	Bethlehem, Ind	Fireplace	Feb. 20, 1866.
58,871	Moon, Hiram E., and Joseph Doan	Wilmington, Ohio	Ditching machine	Oct. 16, 1866.
60,035	Mooney, Laurence	Allegheny, Pa	Churns	Nov. 27, 1866.
54,387	Moore, Abner, jr	Hillsboro', Ohio	Ladder, step	May 1, 1866.
56,433	Moore, Albert	San Francisco, Cal	Quartz mills	July 17, 1866.
56,081	Moore, Charles, sr	Trenton, N. J	Woven bags	June 5, 1866.
	Moore, C. A. (*See* Hill, George W., assignor.)			
55,145	Moore, Charles A	West Brook, Conn	Kettle bottoms	May 29, 1866.
60,406	Same	....do	Tags	Dec. 11, 1866.
59,134	Moore, Charles E., assignor through mesne assignments to New England Model Collar Company.	Roxbury, Mass	Collars, paper, machine for folding	Oct. 23, 1866.

	Moore, Charles H. (*See* Mason, William B., assignor.)			
	Moore, C. H., and A. Sisson. (*See* Sisson, Robert E., assignor.)			
54,938	Moore, George Rodney	Lyons, Iowa	Stoves, heating	May 22, 1866.
58,666	Moore, Hiram W	Bridgeport, Conn	Furnaces, annealing	Oct. 9, 1866.
53,027	Moore, James C	Philadelphia, Pa	Lanterns. (Antedated February 24, 1866)	Mar. 6, 1866.
	Moore, J. C., and Sarah A. Connett. (*See* Connett, A. M., assignor.)			
60,407	Moore, James D	Grinnell, Iowa	Shuttle winders, tatting	Dec. 11, 1866.
	Moore, Jesse R., and Cyrus W. Saladee. (*See* Saladee & Moore.)			
59,625	Moore, John	Gardiner, Maine	Wood, machine for polishing	Nov. 13, 1866.
	Moore, John G. (*See* Flora, Orlando V., assignor.)			
59,437	Moore, Joseph A	Louisville, Ky	Ploughs	Nov. 6, 1866.
55,522	Moore, J. J	Little York, N. Y	Sleigh brakes	June 12, 1866.
56,780	Moore, J. Owen	Washingtonville, N. Y	Milk, apparatus for cooling	July 31, 1866.
57,752	Moore, L. B	Janesville, Wis	Cultivators, corn	Sept. 4, 1866.
	Moore, M., *et al.* (*See* Rehfuss, George, assignor.)			
52,495	Moore, Marquis D., assignor to self and Samuel Bromberg	Brooklyn, N. Y	Press, hay and cotton	Feb. 6, 1866.
60,036	Moore, Robert F	Manchester, N. H	Hose pipes, nozzles for	Nov. 27, 1866.
53,855	Moore, Samuel C	Boston, Mass	Raisins, machine for seeding	Apr. 10, 1866.
54,388	Same	do	Egg beater, cake cutter, and nutmeg grater	May 1, 1866.
56,037	Moore, Solomon B	Lockport, N. Y	Roofing cement	Nov. 27, 1866.
54,005	Moore, Thomas	New York, N. Y	Racks, hay-feeding	Apr. 17, 1866.
2,479	Moore, Thomas, and J. S. Haldeman	Bloomington, Ill	Lamp flue (Design)	Oct. 2, 1866.
60,038	Moore, Thomas, assignor to Jackson Huckill	do	Broom head	Nov. 27, 1866.
52,438	Moore, Thomas C	Marion, Ind	Eave trough	Feb. 6, 1866.
55,338	Moore, William	Kokomo, Ind	Boiler feeders, automatic	June 5, 1866.
	Moore, William	Brooklyn, N. Y	Locks, door (Extension)	Sept. 12, 1866.
56,434	Moore, W. B	Philadelphia, Pa	Broom head	July 17, 1866.
	Moorhead, Stanley R. (*See* Beach, Thomas, assignor.)			
53,028	Moorman, Charles T. and Eli W	Jamestown, Ohio	Sorghum evaporator	Mar. 6, 1866.
	Mora, José A. (*See* Cortes, Eusebio, assignor.)			
58,457	Morahan, Bernard	Brooklyn, N. Y	Pumps, sand	Oct. 2, 1866.
55,523	Morawetz, Leopold, and Charles Volkmar	Baltimore, Md	Heliotropes, automatic	June 12, 1866.
59,438	Morawetz, L. F	do	Camera, solar, vertical	Nov. 6, 1866.
52,439	Morehouse, Charles B	New Castle, Ind	Whip sockets	Feb. 6, 1866.
55,426	Morehouse, C. L., assignor to self and J. B. Merriman	Cleveland, Ohio	Process for preparing stuffing for currying	June 5, 1866.
58,872	Morehouse, William	Buffalo, N. Y	Mop holder	Oct. 16, 1866.
52,930	Morehouse, William, assignor to self and J. Fraser	do	Wrenches	Feb. 27, 1866.
57,360	Moremen, Charles G	Brandenburg, Ky	Harvesters, corn	Aug. 21, 1866.
59,052	Moreno, Lorenzo Olea	New York, N. Y	Medicine	Oct. 23, 1866.
57,832	Morewood, Edmund	London, England	Iron, sheet, with tin and other metals, coating	Sept. 4, 1866.
56,980	Morgan, Charles N	Granby, Mass	Wrenches for nuts of carriage axles	Aug. 7, 1866.
2,250	Morgan, Dayton	Chillicothe, Ohio	Lincoln, Abraham, bust of (Design)	Jan. 30, 1866.
	Morgan, Dayton S. (*See* Loveland, Joseph D., assignor.)			
	Morgan, Elias M., *et al.* (*See* Runk, Brown & Morgan.)			
59,525	Morgan, G. H. and E	England	Carriages	Nov. 6, 1866.
59,526	Same	do	Carriages	Nov. 6, 1866.
58,667	Morgan, George G. W	Washington, D. C	Paper fastener	Oct. 9, 1866.
53,170	Morgan, John C	Alliance, Ohio	Pumps, steam	Mar. 13, 1866.
57,753	Morgan, J. G	Colton, N. Y	Casks, machines for shaving hoops for	Sept. 4, 1866.
54,819	Moriarty, Matthew, assignor to self and William A. Ulmer	Bangor, Maine	Clothes sprinkler	May 15, 1866.
55,691	Morison, R. S	do	Weighing grain, apparatus for	June 19, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,249	Morley, Alvan	Delaware Township, Iowa	Stock-yard	July 10, 1866.
57,361	Morley, F. A	New York, N. Y	Corn from the cob, device for cutting	Aug. 21, 1866.
55,206	Morley, F. A., assignor to self and J. W. Mount	do	Digger, potato	May 29, 1866.
55,146	Morley, Isaac	Pittsburg, Pa	Brick machine	May 29, 1866.
	Morley, S. C., *et al.* (*See* Shawk, Morley & Cushman.)			
52,187	Morley, William	Rolfe, Iowa	Thill holding loop	Jan. 23, 1866.
55,032	Morrill, Oscar F	Chelsea, Mass	Stoves, petroleum	May 22, 1866.
55,033	Same	do	Burners, coal oil, apparatus for cooking by	May 22, 1866.
55,340	Same	do	Heat generating apparatus for cooking purposes	June 5, 1866.
60,223	Same	do	Faucets. (Antedated November 21, 1866)	Dec. 4, 1866.
60,224	Same	do	Heating apparatus, hydrocarbon	Dec. 4, 1866.
54,649	Morris, Augustus, assignor to self and James Cummings	Bloomfield, N. J	Excavating, scoop for	May 8, 1866.
56,595	Morris, Charles E., and John Eymon	Bridgeport, Pa	Slag, furnace, mode of granulating	July 24, 1866.
55,884	Morris, David	Bartlett, Ohio	Well-boring apparatus	June 26, 1866.
	Morris, D. B., *et al.* (*See* Bunyon, Haller & Morris.)			
52,791	Morris, Eli, jr., assignor to self and Edward Heaton	New Haven, Conn	Bottle stopper	Feb. 20, 1866.
57,169	Morris, E. L.	Boston, Mass	Skirts, hoop	Aug. 14, 1866.
55,524	Morris, George L	Taunton, Mass	Screw heads, nicking	June 12, 1866.
59,923	Same	do	Screws	Nov. 20, 1866.
57,547	Morris, Isaac and C. M	Fair Haven, Conn	Wrenches	Aug. 28, 1866.
57,548	Morris, J. J	New Bedford, N. J	Carriages	Aug. 28, 1866.
54,581	Morris, John J	Cincinnati, Ohio	Pumps, rotary	May 8, 1866.
	Morris, J. J., and D. D. Hardy. (*See* Hardy & Morris.)			
59,924	Morris, John S	Buffalo, N. Y	Torpedoes	Nov. 20, 1866.
60,225	Morris, L. B	Hopkinsville, Ky	Pruning knives	Dec. 4, 1866.
57,549	Morris, Robert	Salem, Ind	Reaping machine	Aug. 28, 1866.
59,053	Morrison, J. B	Fort Madison, Iowa	Splinter bar, three-horse	Oct. 23, 1866.
54,192	Morrison, James E	Washington, D. C	Cultivators	Apr. 24, 1866.
56,435	Morrison, W. E. and W. L. Betts	Funkville, Pa	Pumps for deep wells	July 17, 1866.
58,668	Morrison, William Henry	Indianapolis, Ind	Curtain, window	Oct. 9, 1866.
	Morse, C. O., and H. Littlefield. (*See* Estes, Samuel, assignor.)			
55,341	Morse, Cyrus H	North Kingston, R. I	Vial for holding solutions	June 5, 1866.
53,029	Morse, E. P	Batavia, N. Y	Stove-pipe drum	Mar. 6, 1866.
52,440	Morse, Francis B	Milwaukee, Wis	Carriage clip	Feb. 6, 1866.
54,755	Same	do	Carriage seat	May 15, 1866.
55,692	Same	do	Carriages, rub irons for	June 19, 1866.
60,639	Same	do	Wheels, tightening the tires of	Dec. 18, 1866.
	Morse, Geo. F., and J. F. Richardson. (*See* Richardson & Morse.)			
58,458	Morse, G. W	New York, N. Y	Paint for ships' bottoms	Oct. 2, 1866.
56,082	Morse, Herbert A	Canton, Mass	Clothes sprinkler	July 3, 1866.
59,249	Morse, John H	Peoria, Ill	Water-wheels	Oct. 30, 1866.
60,539	Morse, Mark F	Boston, Mass	Sifter, rotary	Dec. 18, 1866.
53,083	Morse, Monroe, assignor to self and Aaron H. Morse	Franklin, Mass	Hats, apparatus for pressing	Mar. 6, 1866.
57,638	Same	do	Hat-pressing machines	Aug. 28, 1866.
	Morse, N. C., *et al.* (*See* Dayton, Henry G., assignor.)			

56,981	Morse, Rufus W	East Berlin, Wis	Chucks	Aug. 7, 1866.
56,436	Morse, S. C., and G. L	Harrison, N. J	Sounding apparatus	July 17, 1866.
56,781	Morse, William A	Philadelphia, Pa	Box, polishing	July 31, 1866.
57,170	Mort, S. A	Dayton, Ohio	Ironing board	Aug. 14, 1866.
	Morton, Thomas O., and William A. Lamberson. (*See* Lamberson & Morton.)			
54,389	Moseley, Charles H	Brooklyn, N. Y	Gas, nitrous oxide, apparatus for preparing	May 1, 1866.
59,054	Moseley, Thomas W. H	Boston, Mass	Bridges	Oct. 23, 1866.
2,445	Moses, Levi	Janesville, Wis	Burial cases (Design)	Sept. 25, 1866.
	Moses, Luther. (*See* Wilcox, W. E., assignor.)			
	Moses, Myron, and Alexander Lindsay. (*See* Lindsay & Moses.)			
57,362	Moses, O. A	Charleston, S. C	Blowpipe	Aug. 21, 1866.
52,309	Moses, William	Buffalo, N. Y	Grain mower	Jan. 30, 1866.
	Mosher, Isaac F. (*See* Phelps, James, assignor.)			
54,582	Mosher, Washington	Pittstown, N. Y	Rakes, horse	May 8, 1866.
51,853	Mosman, George	Chicopee, Mass	Carpet stretcher	Jan. 2, 1866.
	Mess, J. L., and C. W. (*See* Browne, Arthur W., assignor.)			
2,480	Moss, Rees	Philadelphia, Pa	Range, cook's, plates of a (Design)	Oct. 2, 1866.
	Moss, S., *et al.* (*See* Scott, John B., assignor.)			
	Mott, Charles A., *et al.* (*See* Brown, John E., assignor.)			
55,693	Mott, Gershom	Big Run, Ohio	Wells, drilling machine for	June 19, 1866.
54,583	Mott, Horace	Bellevue, Mich	Churns	May 8, 1866.
54,756	Mott, John	Danville, Cal	Ploughs	May 15, 1866.
57,171	Same	do	Ploughs, double revolving	Aug. 14, 1866.
54,192	Mott, Leander M	Chicago, Ill	Oil, lubricating, manufacture of	Apr. 24, 1866.
53,653	Moul, C	Hanover, Pa	Harvester rakes	Apr. 3, 1866.
	Mould, W. R. (*See* Allen, R. N., assignor.)			
	Moulton, Charles G., and George Himrod. (*See* Himrod & Moulton.) Design.			
	Same.			
53,147	Moulton, George, jr	Bath, Maine	Pumps, ship's	May 29, 1866.
52,065	Moulton, Joel	Boston, Mass	Tongs, pipe	Jan. 16, 1866.
55,694	Moulton, William J. L	San Francisco, Cal	Piles, method of protecting	June 19, 1866.
	Mount, J. W. (*See* Morley, F. A., assignor.)			
59,626	Mourland, D. M	Little York, Ill	Clamps and gauges for weatherboarding	Nov. 13, 1866.
58,873	Moyer, Charles, jr	Coopersburg, Pa	Wood-bending machines	Oct. 16, 1866,
55,342	Moyle, Richard M	South Manchester, Conn	Liniment	June 5, 1866.
58,279	Moeller, J. U	Detroit, Mich	Stoves, handles for	Sept. 25, 1866.
	Mueller, T., and J. G. Schwemmer. (*See* Schwemmer & Mueller.)			
56,083	Muhlig, James M	Cambridge, Mass	Sifter and strainer	July 3, 1866.
58,459	Mulchahey, Charles	Springfield, Mass	Lamps. (Antedated September 15, 1866.)	Oct. 2, 1866.
60,226	Same	do	Brush, blacking. (Antedated November 25, 1866.),	Dec. 14, 1866.
58,174	Mulchahey, John, assignor to self and Charles Mulchahey	do	Bottle stopper	Sept. 18, 1866.
56,782	Mulford, M. D., jr	New Providence, R. I	Beehives	July 31, 1866.
57,172	Mulhall, James H	Albany, N. Y	Gas pipes, mode of preventing the freezing of	Aug. 14, 1866.
53,744	Mull, Jonas, assignor to self, Asa D. Reed, and J. R. Calkins	Troy, N. Y	Baker, griddle-cake	April 3, 1866.
58,460	Mull, Jonas, and Asa D. Reed	do	Spiders. (Antedated September 23, 1866)	Oct. 2, 1866.
	Müller, Eberhardt, and Alex'r Mackey. (*See* Mackey & Müller.)			
55,525	Müller, Emil	New York, N. Y	Photographic apparatus	June 12, 1866.
53,084	Müller, Franz, assignor to Lyman S. Paine	Mokena, Ill	Gates, farm	Mar. 6, 1866.
	Muller, G., *et al.* (*See* Bender, John J., assignor.)			
	Muller, Henry. (*See* Hankey, John, assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,627	Muller, John M	North Becket, Mass	Hides, dry, softening	Nov. 13, 1866.
2,354	Müller, Nicholas	New York, N. Y	Clock-case front (Design)	July 10, 1866.
2,377	Same	do	Clock case (Design)	Aug. 7, 1866.
2,502	Same	do	do (Design)	Oct. 30, 1866.
59,628	Mullett, A. B	Washington, D. C	Lock	Nov. 13, 1866.
55,207	Muller, George, assignor to self and Henry J. Bang	New York, N. Y	Planes, carpenter's	May 29, 1866.
	Mumford, Joseph M. (*See* Sutherland, James, assignor.)			
53,654	Mumma, Jacob H	Harrisburg, Pa	Broom head	Apr. 3, 1866.
57,363	Mumma, J. H	do	Straw cutters	Aug. 21, 1866.
53,171	Mumma, John	Middletown, Ohio	Harvester rakes	Mar. 13, 1866.
55,526	Same	do	Mills, fanning	June 12, 1866.
56,250	Mund, Hermann, and Erdmann Hoffman	Chicago, Ill	Lampwick regulator	July 10, 1866.
2,252	Munger, George	New Haven, Conn	Writing tablet (Reissue)	May 22, 1866.
57,824	Munger, George, assignor to self and J. W. Schermerhorn	New York, N. Y	Desk and seat, school	Sept. 4, 1866.
58,952	Same	do	Ink-well cover	Oct. 16, 1866.
57,550	Munger, John, and W. O. Jones	Portland, Me	Docks, dry	Aug. 28, 1866.
53,745	Munger, Wallace T., assignor to self and J. A. Leggat	Branford, Conn	Latches, knob	Apr. 3, 1866.
2,361	Same	do	do (Reissue)	Sept. 18, 1866.
56,783	Munn, John	Columbus, N. J	Heating and melting roofing material, portable apparatus for	July 31, 1866.
55,527	Munns, Cuthbert L	Philadelphia, Pa	Inhalers, gas	June 12, 1866.
	Munoz, J. M., and J. J. Ribon. (*See* Marques, Lorenzo, ass'r.)			
58,461	Munroe, Hezekiah	Fall River, Mass	Fastenings for window blinds	Oct. 2, 1866.
53,468	Munson, Albert L	New Haven, Conn	Napkin, table	Mar. 27, 1866.
54,390	Same	do	Table cover	May 1, 1866.
53,231	Munson, Albert L., assignor to self and Samuel T. Williams	do	Leggings	Mar. 13, 1866.
59,629	Munson, Albert L., assignor to self and Arthur Moffatt	do	Fire-arms, revolving	Nov. 13, 1866.
	Munson, Ezra S., and Lyman Clinton. (*See* Clinton & Monroe.)			
	Munson, Norman C. (*See* Stevens, Levi, assignor.)			
57,364	Murdock, Richard	Baltimore, Md	Scales, letter, beams of	Aug. 21, 1866.
55,695	Murdock, Charles	Ellenville, N. Y	Stave machines. (Antedated June 2, 1866)	June 19, 1866.
	Murdock, E. B., and C. P. Hawley. (*See* Hawley & Murdock.)			
56,784	Murgatroyd, F	Cleveland, Ohio	Condensing steam	July 31, 1866.
51,900	Murkland, William, assignor to self, Charles G. Sargent, and Moses A. Johnson.	Lowell, Mass	Wool and other fibrous material, machines for washing	Jan. 2, 1866.
	Murkland, William, and Moses A. Johnson. (*See* Johnson & Murkland.)			
	Murphy, C. Thornton. (*See* Harris, Sandy, assignor.)			
57,365	Murphy, John	New York, N. Y	Cars, railroad, springs for	Aug. 21, 1866.
58,874	Same	do	Clothes-wringers, roller for	Oct. 16, 1866.
53,856	Murphy, J. C	Mendota, Ill	Gates, farm	Apr. 10, 1866.
53,030	Murphy, M. P., assignor to Oren E. Wilson	New York, N. Y	Alarm, burglar	Mar. 6, 1866.
56,785	Murphy, Nicholas	Washington, D. C	Buckle	July 31, 1866.
56,156	Murphy, William	Ireland	Liquid and spirit meter	July 3, 1866.
60,540	Murphy, William J	do	Ordnance, breech-loading	Dec. 18, 1866.
	Murray, George, and H. B. Bigelow. (*See* Bigelow & Murray.)			

58,875	Murray, John	New York, N. Y	Engines, steam whistles for	Oct. 16, 1866.
60,541	Same	do	Engines, steam and other whistles for. (Antedated Oct. 7, '66.)	Dec. 18, 1866.
55,343	Murray, Peter	Milwaukee, Wis	Cable-stopper	June 5, 1866.
54,193	Murray, Robert, and George Oakes	Boston, Mass	Burners, gas, argand	Apr. 24, 1866.
60,640	Murtaugh, James	New York, N. Y	Raft, life	Dec. 18, 1866.
55,148	Murtha, Charles	Philadelphia, Pa	Brick machine	May 29, 1866.
55,885	Musser, John	Frizellburg, Md	Flour packers	June 26, 1866.
	Mussey, Henry E., and Martin W. Pond. (*See* Pond & Mussey.) Reissue.			
	Mustapha, Mustapha, *et. al.* (*See* Ackland, Mitchell & Mustapha.)			
52,188	Mutty, John	Brewer, Maine	Saws, circular, feed-rollers to	Jan. 23, 1866.
52,876	Myer, H. B	Cleveland, Ohio	Air with hydrocarbon vapors, machine for charging	Feb. 27, 1866.
59,551	Myer, Henry B	Philadelphia, Pa	Gas, illuminating, apparatus for generating	Aug. 28, 1866.
58,876	Myers, Carlisle C	Sterling, Ill	Planter, corn	Oct. 16, 1866.
52,310	Myers, David	Chicago, Ill	Car brake	Jan. 30, 1866.
52,311	Same	do	Car brake	Jan. 30, 1866.
52,312	Same	do	Car brake	Jan. 30, 1866.
58,877	Same	do	Car brake	Oct. 16, 1866.
60,227	Same	do	Car spring. (Antedated September 24, 1866)	Dec. 4, 1866.
60,228	Same	do	Car brakes	Dec. 4, 1866.
52,496	Myers, David, assignor to self and Wm. H. Kretsinger	do	Ploughs, rotary	Feb. 6, 1866.
53,469	Myers, David, and S. H. Noble	do	Water-elevators, steam	Mar. 27, 1866.
	Myers, David, and Levi Wing. (*See* Wing & Myers.)			
53,323	Myers, David P	Salem, Ill	Broom head	Mar. 20, 1866.
	Myers, George, and Edward Oliver. (*See* Oliver & Myers.)			
54,194	Myers, Henry S	Mt. Joy, Pa	Wood, composition for filling the pores of	Apr. 24, 1866.
60,229	Myers, John F	Kokomo, Ind	Furnace for steam boilers	Dec. 4, 1866.
53,655	Myers, L. B	Elmore, Ohio	Bottles, stoppers for	Apr. 3, 1866.
56,251	Same	do	Pencil holder	July 10, 1866.
59,250	Same	do	Furniture, fastening for knobs for	Oct. 30, 1866.
	Myers, William, and James F. Neall. (*See* Neall & Myers.)			
57,173	Myers, William H	Norwich, Conn	Car, railroad, roof. (Antedated July 9, 1866)	Aug. 14, 1866.
	Nagle, Frederick J. (*See* Kunsman, Jacob, sr., assignor.)			
56,596	Naglee, Joseph M	Philadelphia, Pa	Liquors, specimen of, extracting	July 24, 1866.
56,597	Same	do	Syphons	July 24, 1866.
58,878	Nangel, Walter	do	Mortising machine	Oct. 16, 1866.
53,470	Nanny, Oliver T	Mamakating, N. Y	Hay loaders	Mar. 27, 1866.
57,174	Napier, Henry	Elizabeth, N. J	Disinfecting compound	Aug. 14, 1866.
59,251	Same	do	Hides and skins, curing	Oct. 30, 1866.
58,280	Naramor, Andrew	Utica, Mich	Rack, hay, for wagons	Sept. 25, 1866.
57,951	Naramore, H. L	Cummington, Mass	Sled brakes	Sept. 11, 1866.
51,958	Nash, Hiram	Cincinnati, Ohio	Washing machine	Jan. 9, 1866.
58,669	Same	do	Clothes wringer	Oct. 9, 1866.
	Nash, W. (*See* Tilton, Wm. B., assignor.)			
52,587	Nash, William	New Britain, Conn	Knife sharpener	Feb. 13, 1866.
55,149	Nason, Joseph	New York, N. Y	Condensers, surface	May 29, 1866.
53,224	Nathan, Isaac	New Haven, Conn	Dress elevators	Mar. 20, 1866.
	National Knitting Machine Co. (*See* Armour, J. M., assignor.) Same. (*See* Williams, H. L., assignor.)			
	National Line and Cord Company. (*See* Brooks, Peter, assignor.)			
56,786	Naylor, H	Pekin, Ill	Fastenings, sash	July 31, 1866.
58,879	Naylor, Hezekiah	do	Caster for furniture	Oct. 16, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,031	Naylor, James	Providenee, R. I	Steam traps	Mar. 6, 1866.
58,962	Naylor, William	England	Valves, safety, steam	Oct 16, 1866.
	Neal, G. R., and J. L. Norris. (*See* Charles T. Davis, assignor.)			
52,313	Neal, Moses	Kalamazoo, Mich	Churns	Jan. 30, 1866.
	Neal, Willeox & Company. (*See* Bradbury, Henry, assignor.)			
59,439	Neal, James, F. and Wm. Myers	Philadelphia, Pa	Damper regulators	Nov. 6, 1866.
55,886	Nebeker, George	Wilmington Del	Agitating and heating substances, apparatus for	June 26, 1866.
54,391	Nebinger, G. R	Lewisburg, Pa	Broom head	May 1, 1866.
56,982	Same	do	Dryer, fruit	Aug. 7, 1866.
	Needham, Samuel. (*See* Merry, Thomas, assignor.) Designs.			
	Same.			
	Same.			
	Same.			
57,552	Needham, Wales	Roekford, Ill	Harvesters	Aug. 28, 1866.
60,039	Needles, Caleb H	Philadelphia, Pa	Troehes, medicated	Nov. 27, 1866.
57,366	Neely, William	Sandy, Ohio	Fenee	Aug. 21, 1866.
	Neer, Charles	Brooklyn, N. Y	Canal loek-gates (Extension)	Mar. 8, 1866.
57,533	Neff, John, sr	Pultney, N. Y	Fruit-pickers	Aug. 28, 1866.
2,308	Neiberg, C. L., assignor to Sargent & Co	New Haven, Conn	Coffin handle (Design)	May 8, 1866.
2,481	Same	do	Coffin handle (Design)	Oet. 2, 1866.
55,344	Nell, G. W	Philadelphia, Pa	Curtain fixture	June 5, 1866.
58,462	Nellis, G. W	Riehmondville, N. Y	Table, folding	Oet. 2, 1866.
55,958	Nelson, Caleb S., assignor to self and Henry I. Seymour	West Troy, N. Y	Boilers, steam, stationary, mode of setting	June 26, 1866.
55,779	Nelson, Charles, assignor to self, J. W. Taylor, Wm. R. Brown, and F. W. Banks.	Newburg, N. Y	Presses, beam and power, operating	June 19, 1866.
60,408	Nelson, Henry G	Lockport, N. Y	Water-wheels	Dec. 11, 1866.
53,032	Nelson, Thomas	West Troy, N. Y	Emery wheels, proeess for making	Mar. 6, 1866.
51,854	Nelson, William S	St. Louis. Mo	Pumps, draining	Jan. 2, 1866.
57,554	Same	do	Hats	Aug. 28, 1866.
	Nesmith, John. (*See* Hollen, Joseph, assignor.) Reissue.			
59,441	Neuburg, Josef and Ignaz	New York, N. Y	Cooking apparatus and refrigerator	Nov. 6, 1866.
54,939	Neumann. C	do	Skirt hoops, machine for attaehing clasps to	May 22. 1866.
56,787	Neumann, Caesar	do	Skirts, hoop	July 31, 1866.
59,859	Neumeyer. Henry	Millerstown, Pa	Hay forks, horse	Nov. 20, 1866.
58,124	Nevens, Robert B	Lowell, Mass	Plough, snow	Sept. 18, 1866.
54,392	Nevergold, Foster, and George Staekhouse	Pittsburg, Pa	Hay, maehines for raking and loading	May 1, 1866.
55,696	Same	do	Drill and blaeksmith's tongs, combined	June 19, 1866.
	Nevill. Wm., and Wm. W. Hinman. (*See* Hinman & Nevill.)			
52,189	Nevins, G. S	Bushnell, Ill	Grate-bars, hollow, for furnaces	Jan. 23, 1866.
52,588	Nevins, William	Lyons, N. Y	Sorghum, euring	Feb. 13, 1866.
53,656	Newall, Robert	Marietta, Ohio	Petroleum, method of deodorizing	Apr. 3, 1866.
54,586	Newbanks, E. P	Lincoln, Ill	Shingling gauges	May 8, 1866.
56,437	Newbanks, Eli P., and H. M. Powel	do	Scaffold	July 17, 1866.
51,959	Newbury, F. D	New York, N. Y	Fire-arms, breech-loading. (Antedated December 29, 1865)	Jan. 9, 1866.
56,252	Newbury, L. M	Sparta, Wis	Boots and shoes, apparatus for cleaning	July 10, 1866.

54,393	Newby, William H	Seymour, Ind.	Traps, animal	May 1, 1866.
55,150	Newcomb, Eliza H	New York, N. Y.	Fruit-gatherers	May 29, 1866.
	Newcomb, Wm. M., and Arrington Gibson. (*See* Gibson & Newcomb.)			
57,555	Newell, Nelson C	Springfield, Mass.	Buttons, covered	Aug. 28, 1866.
52,736	Newell, William L., and Jacob S. Simmerman	Millville, N. Y.	Car-coupling	Feb. 20, 1866.
	New England Model Collar Company. (*See* Moore, Charles S., assignor.)			
52,737	Newhall, Isaac	Lynn, Mass.	Sole, inner	Feb. 20, 1866.
60,230	Newhall, Walter P., assignor to self and Harriet A. Davison	New York, N. Y.	Hydrants	Dec. 4, 1866.
	New Haven Folding Chair Company. (*See* Dann, Isaac N., ass'r.)			
60,409	Newkirk, William C	Piqua, Ohio	Oil cans	Dec. 11, 1866.
56,252	Newman, James W	Boston, Mass	Neck-ties	July 10, 1866.
56,788	Newman, Joseph	Falmouth, Maine	Wood-bending machine	July 31, 1866.
60,410	Newman, L. L., assignor to self and A. C. Zearing	Jackson, Mich	Washing machine	Dec. 11, 1866.
56,996	Newtown, A., and Frank Favro	Worcester, Mass.	Wrenches	Aug. 7, 1866.
60,231	Newton, A. N	Richmond, Ind.	Brick machine	Dec. 4, 1866.
52,877	Newton, C. W., and O. G	Edinburg, Mo.	Flax, cotton, &c., treating	Feb. 27, 1866.
	Newton, Frederick W., and Herman Winter. (*See* Winter & Newton.)			
54,757	Newton, Isaac	New York, N. Y.	Super-heating apparatus	May 15, 1866.
57,556	Newton, Isaac H	Oakfield, Mich	Saw-mills	Aug. 28, 1866.
	Newton, J. L. (*See* Harrington, Barzilla, assignor.)			
56,438	Newton, Jeremiah L	Boston, Mass.	Wearing apparel, stays, springs, and extensors in	July 17, 1866.
58,733	Newton, Jeremiah L., assignor to self and William Wickersham	....do	Leather, japanned, manufacture of	Oct. 9, 1866.
	New York Engraving and Carving Co. (*See* Pusey, John G., assignor.) Reissue.			
	New York Sub-marine Company. (*See* McKeen, Thomas Cato, assignor.)			
2,446	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Sept. 25, 1866.
2,447	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,448	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,449	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,450	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,451	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,452	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,453	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,454	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
2,455	Same	....do	Carpet pattern (Design)	Sept. 25, 1866.
55,151	Neynaber, A. F. W	Philadelphia, Pa	Beer, apparatus for preserving	May 29, 1866.
56,983	Nicholas, Robert H	Chicago, Ill	Legs, artificial	Aug. 7, 1866.
2,293	Nichols, B. S., assignor to Downs & Company's Manufacturing Company.	Seneca Falls, N. Y.	Pump (Design)	Apr. 3, 1866.
52,589	Nichols, Barak T	Newark, N. J.	Stirrup	Feb. 13, 1866.
57,557	Nichols, David H	New Richmond, Ohio	Stripper, sorghum	Aug. 28, 1866.
53,325	Nichols, D. M	New York, N. Y.	Tool for cutting off boiler tubes	Mar. 20, 1866.
59,055	Nichols, David M	....do	Steam jet for steam generator furnaces	Oct. 23, 1866.
	Nichols, G., and F. B. Van Vleck. (*See* Van Vleck & Nichols.)			
59,440	Nichols, John, and Edwin C. and David Shepard	Battle Creek, Mich	Threshing machine	Nov. 6, 1866.
60,232	Nichols, John P	New Richmond, Ohio	Churns, &c., mechanical movement for operating	Dec. 4, 1866.
	Nichols, Oldin	West Roxbury, Mass	Mills, grinding (Extension)	Oct. 5, 1866.
57,953	Nichols, William	Elmira, N. Y.	Engine, steam governors	Sept. 11, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,252	Nichols, William	Elmira, N. Y.	Piston valves, steam	Oct. 30, 1866.
	Nichols, William, *et al.* (*See* Wilder, Wales & Nichols.)			
57,952	Nichols, W. D.	Chicago, Ill	Plough, cultivator	Sept. 11, 1866.
52,441	Nichols, William H.	Chatham, Conn	Washing machine and wringer	Feb. 6, 1866.
52,365	Nichols, W. H., assignor to self and D. W. Watrous	....do	Bell, door	Jan. 30, 1866.
56,084	Nichols, William R.	Philadelphia, Pa	Car spring	July 3, 1866.
54,940	Nicholson, John	Alleghany, Pa	Heaters, feed-water	May 22, 1866.
58,025	Nicholson, William T., assignor to the Nicholson File Company	Providence, R. I.	Files	Sept. 11, 1866.
59,630	Nickelson, William B.	Lowville, N. Y.	Cheese, hoop for curing and packing	Nov. 13, 1866.
56,598	Nickerson, C.	Chenoa, Ill	Wind wheels	July 24, 1866.
	Nickerson, Sparrow M. (*See* Holman, Calvin J., assignor.)			
59,056	Nickson, R.	Akron, Ohio	Carriage-top protector	Oct. 23, 1866.
56,254	Niles, Daniel	Fly Creek, N. Y.	Planing machines	July 10, 1866.
55,697	Niles, H. D., and James C. Brooks	Bristolville, Ohio	Composition for curing rot in sheep	June 19, 1866.
54,195	Niles, Peter H.	Boston, Mass.	Cans, tin, machine for soldering	Apr. 24, 1866.
55,345	Same	....do	Broom clasp	June 5, 1866.
55,015	Niles, Peter H, assignor to self and Augustus Russ	....do	Metal, sheet ware, seams for	May 22, 1866.
55,016	Same	....do	Metal, sheet, to each other, mode of attaching the sides of	May 22, 1866.
52,190	Niles, W. B., and S. M. Gillett	Little York, N. Y.	Hay wagons, loading attachment to	Jan. 23, 1866.
56,085	Niman, James A.	Mansfield, Ohio	Car coupling	July 3, 1866.
59,057	Nimmo, George	Jersey City, N. J.	Grates for heating stoves	Oct. 23, 1866.
54,196	Ninde, Henry P.	Oskaloosa, Iowa	Sorghum evaporator	Apr. 24, 1866.
55,887	Nishwitz, Frederick	Williamsburg, N. Y.	Sugar moulds	June 26, 1866.
55,888	Same	....do	Sugar-mould tips	June 26, 1866.
56,439	Same	....do	Hay-forks, horse	July 17, 1866.
56,440	Nishwitz, F., and B. S. Hyers	....do	Hay-forks, horse	July 17, 1866.
57,367	Nitzsche, Herman	Philadelphia, Pa	Cane handles	Aug. 21, 1866.
57,175	Nobel, Alfred	New York, N. Y.	Compound, explosive	Aug. 14, 1866.
52,191	Noble, Butler G.	....do	Ores, apparatus for desulphurizing	Jan. 23, 1866.
53,326	Noble, D. J.	New Boston, Ill	Cultivators	Mar. 20, 1866.
58,125	Same	....do	Cultivator, corn	Sept. 18, 1866.
	Noble, Orange. (*See* Fraser, E. J., assignor.)			
54,758	Noble, O. W.	Darlington, Wis.	Eaves troughs, machine for making	May 15, 1866.
	Noble, S. H., and David Myers. (See Myers & Noble.)			
52,249	Nobles, Milton V., assignor to self and John C. Nobles	Rochester, N. Y.	Wells, artesian, mode of sinking	Jan. 23, 1866.
52,931	Same	....do	Wells, tubular, sinking	Feb. 27, 1866.
55,346	Nobles, William H.	St. Paul, Minn	Dredging boat, harbor	June 5, 1866.
55,347	Same	....do	Dredging boat, steam	June 5, 1866.
56,984	Same	....do	Dredging machine	Aug. 7, 1866.
	Noddings, Richard, *et al.* (*See* Fowler, Greig & Noddings.)			
57,176	Noe, Lewis F.	New York, N. Y.	Hooks, bench, carpenters'. (Antedated August 2, 1866)	Aug. 14, 1866.
	Noel, John T., and Erasmus M. Day. (*See* Day & Noel.)			
	Noerr, Andrew. (*See* Hamilton, George B., assignor.)			
55,889	Noll, Michael	....do	Eye water	June 26, 1866.
	Norcott, W. J., and Charles W. Kimball. (*See* Kimball & Norcott.)			

56,086	Noreross, Joseph W	Middletown, Conn	Rowlocks	July 3, 1866.
56,087	Same	do	Tackle-blocks, sheave	July 3, 1866.
57,257	Nordhoff, William, assignor to William Knabe & Co	Baltimore, Md	Pianos	Aug. 14, 1866.
57,754	Nordyke, Ellis, and Addison H	Richmond, Ind	Mills, grinding	Sept. 4, 1866.
	Norfolk and New Brunswick Hosiery Company. (*See* Kilbourn, Edward E., assignor.)			
53,657	Norman, William	New York, N. Y	Presses	Apr. 3, 1866.
55,780	Norris, Daniel G., assignor to self, John H. Paddoek, and Rufus S. Merrill.	St. Johnsbury, Vt	Harvesters	June 19, 1866.
	Norris, J. L., and G. R. Neal. (*See* Davis, Charles F., assignor.)			
	North and Judd Manufacturing Company. (*See* MeManus, Alonzo, assignor.)			
51,960	North, John	Brooklyn, N. Y	Metal, press for striking up	Jan. 9, 1866.
55,348	North, O. B	New Haven, Conn	Saddle, harness seats	June 5, 1866.
	North, O. B. & Company. (*See* Crafts, Samuel, assignor.)			
60,542	Northrop, Francis B	Newark, N. J	Sawing shingles	Dec. 18, 1866.
53,366	Northrup, Henry B., and James H. Patterson	Sandy Hill, N. Y. / Glen's Falls, N. Y.	Stove-pipe drum	Jan. 30, 1866.
56,599	Norton, Charles	New Haven, Conn	Bolts, eye, for vessels, dies for making	July 24, 1866.
55,890	Norton, E. D	Bradford, Pa	Mill sieves	June 26, 1866.
	Norton, E. L., and M. H. Merriam. (*See* Merriam & Norton.)			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
56,255	Norton, Joshua, 3d	Chicago, Ill	Dryer, grain	July 10, 1866.
52,738	Norton, S. W	Lemont, Ill	Furnaces, hot-air	Feb. 20, 1866.
52,878	Norton, Tertius S	Chicopee, Mass	Vices, process for steel facing	Feb. 27, 1866.
54,006	Norton, William J	Cincinnati, Ohio	Engines, rotary	Apr. 17, 1866.
	Norwalk Lock Company. (*See* Elwell, Henry H., assignor.)			
55,891	Norwood, Rufus	Baltimore, Md	Roofing	June 26, 1866.
56,997	Same	do	Pipes, smoking	Aug. 7, 1866.
60,233	Nott, J. V. Henry	Guilderland, N. Y	Bag-holders	Dec. 4, 1866.
59,631	Nottingham, Morgan, and William Duncan	Vinton, Iowa	Drills	Nov. 13, 1866.
52,739	Nougaret, Emile	Newark, N. J	Hats, apparatus for pouncing	Feb. 20, 1866.
58,126	Same	do	Hats, machines for pouncing	Sept. 18, 1866.
58,463	Nourse, E. B	Eaton, Ohio	Alphabet frame	Oct. 2, 1866.
57,954	Nourse, Robert B	Corydon, Ind	Evaporator	Sept. 11, 1866.
2,214	Nowak, Moriz, ass'r to Louis Ludovici and Louis Ludovici, jr	New York, N. Y	Blasting compound (Reissue)	Mar. 27, 1866.
57,955	Nowlan, Samuel B. B	do	Varnishing cloth, machine for	Sept. 11, 1866.
57,956	Same	do	Composition, water-proof	Sept. 11, 1866.
	Noyes, Charles W., and Edward H. Jones. (*See* Hallett, James E., assignor.)			
59,442	Noyes, George E	Washington, D. C	Steam generators	Nov. 6, 1866.
52,314	Noyes, Isaac P	Providence, R. I	Shells, explosive	Jan. 30, 1866.
55,349	Noyes, Joseph P	Newark, N J	Combs	June 5, 1866.
58,880	Noyes, Joseph P	Binghamton, N. Y	Press, drop	Oct. 16, 1866.
	Nulson, A., *et al.* (*See* Haneison, Wagner & Nulson.)			
60,411	Nunn, R. J	Savannah, Ga	Wearing apparel, pins for attaching	Dec. 11, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,350	Nusbaum, John	Alliance, Ohio	Car truck	June 5, 1866.
56,789	Nutting, William H	Orange, Mass	Stove-pipe damper	July 31, 1866.
58,175	Nutty, Robert, assignor to self and John Scott	New York, N. Y	Drilling machine	Sept. 18, 1866.
53,172	Nye, S. R.	Barre, Mass	Rakes, horse	Mar. 13, 1866.
54,197	Nye, Sherman R	do	Stove-pipe damper	Apr. 24, 1866.
53,658	Nystrom, John W	Philadelphia, Pa	Iron, apparatus for refining	Apr. 3, 1866.
	Oakes, George, and Robert Murray. (*See* Murray & Oakes.)			
	Oakes, Josiah, and John J. Flannagan. (*See* Sweeney, Peter, assignor.)			
59,058	Oakey, Joseph B	Indianapolis, Ind	Stove cover, pot, and pan lifter	Oct. 23, 1866.
57,654	Oakley, Frederick, assignor to John Collins	England	Alarm, burglar, and door fastener	Aug. 28, 1866.
56,790	Oat, Alfred A	Philadelphia, Pa	Lock, safe	July 31, 1866.
59,527	Oates, Richard H	Toronto, C. W	Clothes dryer	Nov. 6, 1866.
53,387	Oberlander, Edward, Henry Weiss, and Ernest Bagnicki	New York, N. Y	Paint, composition for	Mar. 20, 1866.
53,503	Obernetter, J. B	Bavaria	Photographic pictures on ceramic ware, mode of securing	Feb. 6, 1866.
55,351	O'Brien, William S	Brimfield, Ill	Harrows	June 5, 1866.
56,985	Odell, Eli	Winterset, Ind	Fence	Aug. 7, 1866.
56,600	Odell, Thomas G., and Boyd Glover	Camp Point, Ill	Spinning machines, hand	July 24, 1866.
60,040	Odholm, Andrew P	Bridgeport, Conn	Wheels, wagon, machines for dressing the felloes of	Nov. 27, 1866.
2,253	Odiorne, George	Boston, Mass	Air, apparatus for carburetting (Reissue)	May 22, 1866.
52,066	O'Donald, James	Clinton, Ill	Churns	Jan. 16, 1866.
	O'Ferrall, J., *et. al.* (*See* Crawford, A. B., assignor.)			
52,590	Ogborn, Harrison	Richmond, Ind	Shovel and tongs, combined	Feb. 13, 1866.
55,152	Same	do	Screens, grain	May 29, 1866.
57,368	Ogborn, H., and A. T. Chapin	do	Stove-pipe damper	Aug. 21, 1866.
58,670	Ogburn, S. D	Springfield, Tenn	Sewing machines, hemming guides for	Oct. 9, 1866.
55,829	Ogden, Aaron L	Newark, N. J	Carbon battery connections	June 26, 1866.
59,860	Ogden, H. L	Atkinson, Ill	Car coupling	Nov. 20, 1866.
52,067	Ogden, William	Philadelphia, Pa	Trap, insect	Jan. 16, 1866.
	Ogle, Eli T. (*See* Golay, George W., assignor.)			
52,068	Ohl, G. Adan	Newark, N. J	Cap, expanding	Jan. 16, 1866.
	Ohlemacher, Charles, and Otto Krohmer. (*See* Krohmer & Ohlemacher.)			
52,069	Ohmer, Augustus J	Hamilton, Ohio	Soda fountain, portable	Jan. 16, 1866.
	Oleott, John N., *et. al.* (*See* Witsil, George L., assignor.)			
55,893	Old, James	Pittsburg, Pa	Hydrants	June 26, 1866.
55,894	Old, Joseph	Reading, Pa	Stove cover and culinary vessels, lifter for	June 26, 1866.
52,192	Oldfield, Benjamin	Newark, N. J	Looms	Jan. 23, 1866.
58,464	Same	do	Looms for weaving narrow wares	Oct. 2, 1866.
2,378	Same	do	Looms (Division A, reissue)	Oct. 16, 1866.
2,379	Same	do	Looms (Division B, reissue)	Oct. 16, 1866.
54,759	Oldham, Edmund	Brooklyn, N. Y	Photographic machines	May 15, 1866.
56,147	Olds, A. M., assignor to self and Albert Manvel	New York, N. Y	Wrenches	July 3, 1866.
55,352	Olds, A. W	Green Oak, Mich	Fences	June 5, 1866.
56,446	Same	do	Fences	July 17, 1866.

56,442	Olin, Norman, and E. L. Hopkins	Homer, Mich	Washing machines	July 17, 1866.
59,632	Oliver, Caleb M	Port Carbon, Pa	Axle boxes	Nov. 13, 1866.
53,033	Oliver, David	Carthage, Ill	Hedge cutting machine	Mar. 6, 1866.
53,550	Oliver, Edward, and George Myers	Great Britain	Boats from davits, apparatus for disengaging	Mar. 27, 1866.
53,659	Oliver, Thomas O	New York, N. Y	Jars and bottles, stoppers for	Apr. 3, 1866.
55,588	Oliver, W. G., assignor to self and C. K. Remington	Buffalo, N. Y	Gun-locks, safety stop for	June 12, 1866.
56,256	Olmstead, Edward A. F	New York, N. Y	Railroad sweeper	July 10, 1866.
54,394	Olmstead, L. H	Stamford, Conn	Oilers	May 1, 1866.
54,760	Same	do	Chucks	May 15, 1866.
58,281	Olry, M. V	Philadelphia, Pa	Bottles, cap for	Sept. 25, 1866.
	Oman, Z., *et. al.* (*See* Simpson, Oman & Foreman.)			
	Onderdonk, John P. (*See* Hubbard, Albert, assignor.)			
	Same. (*See* Liddell, W. J. F., assignor.)			
52,740	Onderdonk, Robert	New York, N. Y	Apple corer and slicer	Feb. 20, 1866.
53,327	O'Neil, John K	Kingston, N. Y	Weighing scoops	Mar. 20, 1866.
53,660	Same	do	Hay forks, horse	Apr. 3, 1866.
54,007	Same	do	Hay forks, horse	Apr. 17, 1866.
54,585	Same	do	Sleeves and leggings, attachments for	May 8, 1866.
54,941	Same	do	Balancers, spring	May 22, 1866.
55,528	Same	do	Hay forks, horse	June 12, 1866.
59,633	Same	do	Hay forks, horse	Nov. 13, 1866.
52,806	O'Neill, Andrew	Portsmouth, Ohio	Boilers, guard plate for	Feb. 20, 1866.
58,465	Oneill, John H. J	New Haven, Conn	Carriage shackle	Oct. 2, 1866.
55,353	Onions, William	St. Louis, Mo	Bale, cotton, tie	June 5, 1866.
59,443	Same	do	Bale, cotton, tie	Nov. 6, 1866.
52,591	Oppenheimer, Edward	New York, N. Y	Watches, calendar	Feb. 13, 1866.
	Oppenheimer, J., *et. al.* (*See* Goty & Guillemin, assignors.)			
	Oppenheimer, Leopold, and Augustus W. Scharit. (*See* Scharit & Oppenheimer.)			
2,317	Oppenheimer, Solomon	Peru, Ind.	Knife handle (Design)	May 15, 1866.
56,986	Same	do	Tables, joints for frames and legs of. (Antedated Aug. 2, 1866)	Aug. 7, 1866.
60,412	Same	do	Stoves, damper or draught regulator for	Dec. 11, 1866.
57,177	Opper, Morris	New York, N. Y	Looms for weaving cloth with swells or gores	Aug. 14, 1866.
59,253	Orbeton, William W. S	Haverhill, Mass	Corn popper	Oct. 30, 1866.
59,254	Same	do	Bit stocks	Oct. 30, 1866.
55,208	Orbeton, William W. S., assignor to self, G. W. Campbell & G. P. Russell.	do	Clothes dryer	May 29, 1866.
	Orcutt, John F. (*See* Richmond, Edward, assignor.)			
60,041	Orcutt, Nelson	Binghamton, N. Y	Soap, composition for making	Nov. 27, 1866.
59,444	Orcutt, William	Cambridge, Ill	Washing machine, churn	Nov. 6, 1866.
60,413	Ordner, J. L	Cleveland, Ohio	Wagons, dumping	Dec. 11, 1866.
	Ormiston, J. C., and E. S. Leger. (*See* Leger & Ormiston.)			
59,861	Ormsby, William	Boston, Mass	Clamps, screw, hand	Nov. 20, 1866.
53,857	Orndorff, Ira	Russellville, Ky	Looms	Apr. 10, 1866.
53,858	Same	do	Looms	Apr. 10, 1866.
53,173	Orne, Eben T	Chicago, Ill	Can, tin, opener	Mar. 13, 1866.
59,513	Orne, Eben T., assignor to self and John P. Hart	do	Cans, tool for opening	Nov. 6, 1866.
	Orne, James D. (*See* Hawkins, William H., assignor.)			
55,153	O'Rork, Patrick	Norwalk, Conn	Composition for stiffening felt cloth	May 29, 1866.
	Orr, William, jr. (*See* Wright, George F., assignor.)			
53,746	Orr, William, jr., assignor to self and William Orr, sr	Clinton, Mass	Yarns, machine for winding	Apr. 3, 1866.
58,466	Orr, William, jr. and George F. Wright	do	Paper ribbon, apparatus for holding	Oct. 2, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,174	Ortlieb, Frederick	Williamsburg, N. Y.	Blowers, fan	Mar. 13, 1866.
60,042	Same	....do	Condensers, surface	Nov. 27, 1866.
55,154	Osborn, F. M	Dover Plains, N. Y	Carpet stretcher and hemmer. (Antedated May 22, 1866)	May 29, 1866.
59,059	Same	....do	Tack extractor	Oct. 23, 1866.
54,008	Osborn, George R., and John Crandell	Ilion, N. Y	Boot-jack, nut cracker, tack hammer, and tack puller	Apr. 17, 1866.
2,257	Osborn, William, assignor through mesne assignments to W. E. Doubleday and J. Stuart.	Louisville, Ky	Bonnets, bonnet frames, &c., machine for pressing. (Division A, reissue.)	May 29, 1866.
2,288	Same	....do	Bonnets, bonnet frames, &c., machine for pressing. (Division B, reissue.)	June 19, 1866.
60,234	Osborn, W. D	Boston, Mass	Wagons, express	Dec. 4, 1866.
	Osborne, David M. (*See* Burdick, Orren H., assignor.)			
55,781	Osborne, David M., assignor to self and William A. Kirbey	Auburn, N. Y	Harvesters	June 19, 1866.
57,755	Osborne, Edwin	Philadelphia, Pa	Legs, wooden, tools for making. (Antedated August 23, 1866)	Sept. 4, 1866.
57,756	Same	....do	Legs, wooden, boring tools for making. (Antedated Aug. 23, 1866)	Sept. 4, 1866.
	Osborne, J. W. (*See* Cheeseman, George W., assignor.)			
	Osborne, J. W., and G. W. Cheeseman. (*See* Cheeseman & Durand, assignors.)			
	Osgood and Smith. (*See* Sisco, Henry C., assignor.)			
51,855	Osgood, F. R	Roxbury, Mass	Table, extension	Jan. 2, 1866.
59,445	Osgood, Isaac	Utica, N. Y	Wheel-hubs to axles, mode of securing	Nov. 6, 1866.
	Osgood, James H., jr. (*See* Hanna, James W., assignor.)			
60,043	Osgood, James H., jr., assignor to self and James W. Hanna	Boston, Mass	Drying lumber, apparatus for	Nov. 27, 1866.
55,354	Osgood, Jason C	Troy, N. Y	Hose coupling	June 5, 1866.
	Osgood, Rufus F. (*See* Redmond, Owen, assignor.)			
25,792	Osgood, R. F., assignor to Charles W. Kinne	Rochester, N. Y	Well tubing, method of sinking	Feb. 20, 1866.
58,953	Same	....do	Well tubing, mode of sinking	Oct. 16, 1866.
53,661	Osterheld, George, and Rudolf Eickemeyer	Yonkers, N. Y	Hats, machine for blocking and shaping	Apr. 3, 1866.
58,554	Osterhoudt, J., assignor to self and Wm. B. Dubois	New York, N. Y	Cans, tin, method of opening	Oct. 2, 1866.
	Ostrander, William, and Thomas J. Woolcocks. (*See* Woolcocks & Ostrander.)			
59,255	Otis, Charles G	Troy, N. Y	Compound for feeding stock	Oct. 30, 1866.
56,601	Otis, Edmond C	Voluntown, Conn	Carriage axles, anti-friction	July 24, 1866.
	Otis, Frederick S. (*See* McFarland, Luther W., assignor.)			
60,044	Otis, Samuel A	Boston, Mass	Railroads, turn-outs for. (Antedated November 11, 1866)	Nov. 27, 1866.
57,558	Otto, John W	St. Louis, Mo	Pianos	Aug. 28, 1866.
57,559	Outwater, J. D. C	New York, N. Y	Disinfecters	Aug. 28, 1866.
56,791	Overbaugh, Abraham W	....do	Studs, initial	July 31, 1866.
60,045	Same	....do	Slate-cleaner	Nov. 27, 1866.
52,616	Overhiser, George C., assignor to self and Jacob C. Robie	Ionia, Mich	Sewing-machine hemmers. (Antedated February 5, 1866)	Feb. 13, 1866.
59,135	Overmann, H. J., assignor to William S. Hascall	New York, N. Y	White lead, manufacture of	Oct. 23, 1866.
2,350	Overpeck, Isaac E	Overpeck's Station, Ohio	Power, manual, machines (Reissue)	Sept. 4, 1866.
60,046	Same	....do	Corn shellers	Nov. 27, 1866.
53,377	Owen, Benjamin, assignor to self and John Owen	Dayton, Ohio	Planters, cotton seed	Mar. 20, 1866.
54,198	Owen, George B	New York, N. Y	Clocks, calendar	Apr. 24, 1866.

59,634	Owen, William M	Homer, Iowa	Wrenches	Nov. 13, 1866.
	Owens, Lane, Dyer & Company. (*See* Kirk, William A. L., assignor.)			
57,369	Owens, M. W	Waterford, Pa	Broom-head and clamp	Aug. 21, 1866.
54,586	Oxland, Robert	San Francisco, Cal	Sulphur, process in refining	May 8, 1866.
2,196	Oyston, Charles	Little Falls, N. Y	Nozzles (Reissue)	Mar. 13, 1866.
53,175	Same	do	Nozzles for fire-engines	Mar. 13, 1866.
	Pabst, George F. W. (*See* Uhlig, Carl F., assignor.)			
55,698	Pacalin, Onesippe	New York, N. Y	Boots and shoes	June 19, 1866.
59,747	Packard, Franklin S	Springfield, Mass	Stone-sawing machine	Nov. 20, 1866.
54,395	Packard, Isaac T	Chicago, Ill	Musical instruments, reed	May 1, 1866.
59,060	Packard, Manning	Clarendon, N. Y	Gates	Oct. 23, 1866.
60,543	Packard, M. and R. B	North Bridgewater, Mass	Shoe-binding	Dec. 18, 1866.
55,895	Packer, Edward E. and Charles T., assignors to William E. Lockwood.	Philadelphia, Pa	Drill couplings	June 26, 1866.
60,544	Packer, E. E., jr., and John Daley, assignors to selves and Edgar L. Thompson.	do	Car coupling	Dec. 18, 1866.
53,662	Packer, Edward W	Paulsborough, N. J	Plants, implements for setting out	Apr. 3, 1866.
2,140	Packer, Henry H	Boston, Mass	Drills (Reissue)	Jan. 2, 1866.
54,942	Packham, Albany	Prestonsville, Ky	Planters, cotton-seed	May 22, 1866.
	Paddock, Horace and Halsey R. *et al.* (*See* Dean, Chester F., assignor.)			
	Paddock, John H. *et al.* (*See* Norris, Daniel G., assignor.)			
58,467	Paddock, William S	Albany, N. Y	Fastenings for trunks, boxes, &c	Oct. 2, 1866.
59,635	Padmore, Charles	Philadelphia, Pa	Stud, shirt. (Antedated October 27, 1866)	Nov. 13, 1866.
56,088	Padrick, Oscar D	Shelbyville, Ind	Harrows	July 3, 1866.
54,820	Page, Albert G., assignor to Page, Wilson & Company	Fitchburg, Mass	Tongs, pipe	May 15, 1866.
55,699	Page, Clark D	Rochester, N. Y	Lime kilns	June 19, 1866.
55,896	Page, Enos	Streetsborough, Ohio	Rack and holder, sheep	June 26, 1866.
57,178	Page, John B	Chicago, Ill	Motion, machine for converting reciprocating into	Aug 14, 1866.
56,987	Page, John G	Rockford, Ill	Gates, automatic	Aug. 7, 1866.
69,235	Same	Memphis, Tenn	Cotton picker	Dec. 4, 1866.
60,047	Page, Louis E	Pontiac, Mich	Vehicles, adjustable spring back for	Nov. 27, 1866.
54,587	Page, Moses W	Franklin, N. H	Leather, preparation of	May 8, 1866.
54,588	Same	do	Tanning, process of	May 8, 1866.
	Page, Nathan. (*See* Class, W. F., assignor.)			
58,671	Page, Samuel	McAllisterville, Pa	Evaporators	Oct. 9, 1866.
57,961	Page, T. C	Holyoke, Mass	Wrenches	Jan. 9, 1866.
	Page, T. S. (*See* Goodspeed, George N., assignor.)			
2,267	Page, William H., assignor to William H. Page & Company.	Norwich, Conn	Letters, alphabet of (Design)	Feb. 27, 1866.
	Paige, John C. (*See* Burnett, William, assignor.)			
56,148	Paige, J. W., assignor to self and J. L. Paige	Corning, N. Y	Stoves, coal	July 3, 1866.
53,859	Pain, J. A	Clyde, N. Y	Awning	Apr. 10, 1866.
	Paine, Lyman S. (*See* Muller, Franz, assignor.)			
56,461	Paine, W., and R. E. Caviness	Fairfield, Iowa	Broom-head	July 17, 1866.
57,179	Painter, Henry W	New Haven, Conn	Carriage pole	Aug. 14, 1866.
	Painter, Jacob. (*See* Whipple, George A., assignor.)			
55,427	Paiste, David R., assignor to Reese, Lake, Melick & Company	Williston, Pa	Harvesters	June 5, 1866.
55,529	Pallissard, P	Aroma, Ill	Baby-walker	June 12, 1866.
54,396	Palmer, Aaron	Brockport, N. Y	Harvesters	May 1, 1866.
54,397	Same	do	Harvester crank-motion	May 1, 1866.
	Palmer, Almond H., and William B. Greer. (*See* Greer & Palmer.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,155	Palmer, Alonzo, and John Bean	Hudson, Mich	Wells, subterranean, reservoirs for	May 29, 1866.
55,156	Palmer, Alonzo, and Robert Gilleland	do	Stump extractors	May 29, 1866.
52,442	Palmer, Charles A	Newburg, N. Y	Fastenings, blind	Feb. 6, 1866.
	Palmer, Edward A., and Adolphus J. Simmons	Clayville, N. Y	Whiffletree hook (Extension)	Sept. 6, 1866.
59,636	Palmer, Edwin A	do	Cheese hoop	Nov. 13, 1866.
	Palmer, E. P., and E. H. Sheffield. (*See* Sheffield & Palmer.)			
53,471	Palmer, Frederic I	Springfield, Mass	Buttons	Mar. 27, 1866.
53,472	Same	do	Garments, fastenings for	Mar. 27, 1866.
56,792	Palmer, George T	Brooklyn, N. Y	Water coolers. (Antedated July 20, 1866.)	July 31, 1866.
	Same. (*See* Quick, Elias B., assignor.)			
54,199	Palmer, Henry	San Francisco, Cal	Wells, artesian, drills for	Apr. 24, 1866.
51,856	Palmer, Henry H	Rockford, Ill	Bed bottoms. (Antedated December 28, 1865.)	Jan. 2, 1866.
	Palmer, H. K. W. (*See* Mason, William H., assignor.)			
58,282	Palmer, H. S	Norvell, Mich	Hay, machines for raking and loading	Sept. 25, 1866.
58,283	Palmer, Isaac E	Hackensack, N. J	Mosquito canopies, frames for	Sept. 25, 1866.
51,857	Palmer, J	Cleveland, Ohio	Paper, sand, manufacture of	Jan 2, 1866.
54,070	Palmer, Joel H., assignor to self and Clark H. Brown	Greenbush, N. Y	Oil cups, lubricating	Apr. 10, 1866.
	Palmer, John, and F. Shurr. (*See* Shurr & Palmer.)			
2,154	Palmer, Nelson	Hudson, N. Y	Threshing machines (Reissue)	Jan. 23, 1866.
53,860	Same	do	Threshing machines	Apr. 10, 1866.
	Same. (*See* Spencer, Isaac S., assignor.) Reissue.			
	Same. (*See* Mills, P. W., assignor.)			
56,089	Palmer, Rees	West Chester, Pa	Water-wheels, sheet-metal	July 10, 1866.
54,389	Palmer, S. W. and J. F	Auburn, N. Y	Gearing	May 8, 1866.
60,414	Palmer, V	Castalia, Ohio	Churns	Dec. 11, 1866.
60,545	Palmer, William	New York, N. Y	Fastening blind slats, device for	Dec. 18, 1866.
53,663	Pangborn, C. S., and George W. Beers	Onarga, Ill	Cultivators	Apr. 3, 1866.
54,761	Pangborn, S. B., and G. H. Griffin	Boston, Mass	Egg-beater	May 15, 1866.
52,942	Paraf, Alfred	France	Dyeing yarn, &c	Feb. 27, 1866.
60,546	Same	do	Dyeing and printing textile fabrics and yarns	Dec. 18, 1866.
	Pardee, Austin R. (*See* Paterson, David, assignor.)			
	Paris, Daniel E. (*See* Spaulding, Samuel B., assignor.) Reissue.			
56,988	Park, Austin Ford	Troy, N. Y	Telegraphs, electro-chemical	Aug. 7, 1866.
55,530	Park, Jesse K	Marlboro', N. Y	Fruit baskets	June 12, 1866.
	Park, R. W. (*See* Vaughan, Aaron C., assignor.)			
53,232	Parke, Thomas J., assignor to self, J. Bryan, J. Gillespie, and E. A. Huntsicker.	Philadelphia, Pa	Well-boring apparatus. (Antedated November 8, 1865.)	Mar. 13, 1866.
	Parker, Andrew. (*See* Fairchild, J. H., assignor.)			
	Parker, Charles. (*See* Perkins, Russell B., assignor.) Reissue.			
57,957	Parker, Charles	Meriden, Conn	Vices	Sept. 11, 1866.
53,861	Parker, David	Shaker Village, N. Y	Preserving and drying green corn on the cob, method of	Apr. 10, 1866.
56,149	Parker, Edward, assignor to self and Julius Hotchkiss	Middletown, Conn	Gear cutter	July 3, 1866.
55,017	Parker, Ephraim, assignor to Alfred A. Parker	Marlow, N. H	Stove-pipe damper	May 22, 1866.
52,793	Parker, H. D., assignor to C. L. Burtis, Thomas A. Burrows, and Eli S. Hart.	Genesee, N. Y	Pipe coupling	Feb. 20, 1866.

52,443	Parker, Henry L	Hartford, Conn	Awl, brad, handle	Feb. 6, 1866.
54,821	Parker, James, assignor to self, L. S. B. and L. S. Holden	Woburn, Mass	Leather, machine for boarding and graining	May 15, 1866.
52,002	Parker, James H., assignor to self, James T. Hall, and Isaac Pierce	Trenton, N. Y	Trusses, springs for	Jan. 9, 1866.
	Parker, John. (*See* Daltry, David, assignor.)			
58,127	Parker, John C	Chicago, Ill	Locomotives	Sept. 18, 1866.
58,468	Parker, J. J	Marietta, Ohio	Well, deep, tubes, packing for	Oct. 2, 1866.
58,469	Same	...do	Well packing	Oct. 2, 1866.
58,470	Parker, J. J. and E. D	...do	Braid and embroidery, machine for making dies for	Oct. 2, 1866.
58,672	Parker, John T	Farmington, Maine	Well borer	Oct. 9, 1866.
55,897	Parker, Owen B	Woodville, Mass	Book holder	June 26, 1866.
59,256	Parker, R. W	Woburn, Mass	Pulleys	Oct. 30, 1866.
53,541	Parker, Samuel, assignor to Elton Ward	Forest Grove, N. J	Clothes dryer	Mar. 27, 1866.
60,547	Parker, Thomas, assignor to self and Theodore Rufe	Germantown, Pa	Cans, fruit, self-sealing	Dec. 18, 1866.
52,070	Parkhurst, A. N	Peoria, Ill	Pumps	Jan. 16, 1866.
51,962	Parkhurst, S. R., assignor to Emily R. Parkhurst	Bloomfield, N. Y	Gins, cotton	Jan. 9, 1866.
56,675	Same	...do	Cotton and wool, machine for picking and cleaning	July 24, 1866.
54,762	Parkhurst, V. R	Templeton, Mass	Chair	May 15, 1866.
	Parkhurst, W. L. *et al.* (*See* Spear, Chauncey, assignor.)			
56,257	Parkhurst, Ziba	Milford, Mass	Burring machines, burr-box for	July 10, 1866.
	Parkins, Sylvester, *et al.* (*See* Jones, Spaulding & Parkins.)			
56,325	Parks, Robert, assignor to E. J. Spangler, W. E and E. D. Lockwood.	Philadelphia, Pa	Envelope machine	July 10, 1866.
	Parks, William F., and Louis F. Launay. (*See* Launay & Parks.)			
54,822	Parlour, Joseph T., assignor to self and James Dean	Buffalo, N. Y	Elevator, grain	May 15, 1866.
54,763	Parmele, Edwin, and R. N. Patterson	Davenport, Iowa	Cultivators	May 15, 1866.
51,963	Parmele, S. J	Killingworth, Conn	Jack, lifting	Jan. 9, 1866.
53,034	Parmelee, Dubois D., assignor to Charles L. Richards and Thomas C. Smith.	New York	Rubber, mould for vulcanizing	Mar. 6, 1866.
56,258	Parmelee, Homer	Philadelphia, Pa	Twisting and winding fibres, machine for	July 10, 1866.
60,048	Parr, George	Buffalo, N. Y	Cutlery, manufacture of	Nov. 27, 1866.
54,398	Parrish, Nathan	Kalamazoo, Mich	Stump extractor	May 1, 1866.
59,637	Parrott, J. D	Morristown, N. J	Churns	Nov. 13, 1866.
55,898	Parrott, Anna E	Norfolk, Va	Medicine to cure cholera	June 26, 1866.
	Parrott, George E. (*See* Adams, Richard S., assignor.)			
	Parsons, Alexander, and Charles F. Kimball. (*See* Kimball & Parsons.)			
53,035	Parsons, A. B	Dunton, Ill	Washing machine	Mar. 6, 1866.
54,590	Parsons. C. C	Boston, Mass	Steam, superheating, method of constructing cast-iron apparatus for.	May 8, 1866.
55,700	Same	...do	Cocks, stop	June 19, 1866.
56,259	Same	...do	Soap	July 10, 1866.
	Parsons, C. C., and E. F. Prentiss. (*See* Prentiss & Parsons.)			
51,964	Parsons, George W	Harrisburg, Pa	Broom head	Jan. 9, 1866.
54,200	Same	...do	Broom head	Apr. 24, 1866.
60,049	Same	...do	Lubricating carriage axles, journals, &c., device for	Nov. 27, 1866.
	Parsons, I. A., and G. A. Scott. (*See* Estabrook, Alanson C., assignor.)			
52,592	Parsons, John H	Quincy, Mich	Car coupling	Feb. 13, 1866.
52,593	Same	...do	Warmer, foot	Feb. 13, 1866.
	Parsons, J. H., and P. L. Robinson. (*See* Reid and Swift, assignors.)			
	Same.			
	Same.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Parsons, J. H., and P. L. Robinson. (*See* Reid & Swift, assignors.)			
	Same.			
57,180	Parsons, John W	Owenton, Ky	Saw-mils, head-blocks for	Aug. 14, 1866.
55,355	Parsons, Seth E	Albany, N. Y	Syringes, vaginal	June 5, 1866.
52,594	Parsons, William	Cleveland, Ohio	Wells, oil, mode of securing pipes and bolts in	Feb. 13, 1866.
	Parsons, William C. *et al.* (*See* Sturdevant, Parsons & Wheeler.)			
	Parsons, William J. *et al.* (*See* Prentiss, E. F. *et al*, &c.) Reissue.			
	Same.			
	Same. (*See* Prentiss & Robertson, &c.)			
	Same.			
53,664	Partridge, George, and David M. Johnson	St. Louis, Mo Coshocton, Ohio	Horse power	Apr. 3, 1866.
	Partridge, Joshua W. (*See* French, Erastus S., assignor.)			
	Pashley, W., *et al.* (*See* Bradley, Jeremy, assignor.)			
53,826	Passmore, E. G., jr	Philadelphia, Pa	Harvesters	Apr. 10, 1866.
54,081	Pastorelli, J. Antoine	France	Turpentine from wood, method of extracting	Apr. 17, 1866.
	Patchell, O. G., and Wm. G. Snook. (*See* Snook and Patchell.)			
56,326	Paterson, David, assignor to Austin R. Pardee	Jersey City, N. J	Flange	July 10, 1866,
55,959	Paterson, George W., assignor to self and H. M. Payne	Newburyport, Mass	Looms, picker-arms for	June 26, 1866.
54,399	Patric, John S	Rictor, N. Y	Pumps	May 1, 1866.
55,356	Same	Rochester, N. Y	Pump, cattle	June 5, 1866.
58,471	Patterson, Andrew	Birmingham, Pa	Air, &c., appartus for carburetting	Oct. 2, 1866.
	Patterson, C. S. *et al.* (*See* Rehfuss, George, assignor.)			
52,071	Patterson, E. C	Chicago, Ill	Separators, grain	Jan. 16, 1866.
53,176	Patterson, Elias C	do	Washing and wringing machine	Mar. 13, 1866.
56,090	Patterson, James	New York, N. Y	Tuyeres	July 3, 1866.
	Patterson, James H., and Henry B. Northup. (*See* Northup & Patterson.)			
59,061	Patterson, James S	Whitney's Point, N. Y	Potato fork	Oct. 23, 1866.
53,328	Patterson, Lewis M	Jordan's Grove, Ill	Ploughs, gang	Mar. 20, 1866.
57,825	Patterson, Newton, assignor to self, R. K. Boyd, and M. L. Patterson.	Kingston, Tenn	Freight, method of receiving and discharging	Sept. 4, 1866.
	Patterson, R. N., and Edward Parmele. (*See* Parmele & Patterson.)			
58,128	Pattison, G. C	Baltimore, Md	Anchor	Sept. 18, 1866.
57,958	Pattison, John E	Houma, La	Cane juice, mode of treating	Sept. 11, 1866.
53,863	Pattison, R. R	Springfield, Ill	Knife and fork scourer	Apr. 10, 1866.
59,638	Patton, Charles W	Exeter, Ill	Drills, wheat	Nov. 13, 1866.
57,560	Patton, Joshua D	Davenport, Iowa	Bed bottom	Aug. 28, 1866.
52,072	Patton, Nancy	Coles county, Ill	Preserving eggs, method of	Jan. 16, 1866.
57,370	Patton, William P	Harrisburg, Pa	Eraser-holder	Aug. 21, 1866.
55,357	Paudler, Joseph, jr., and Friedrick Banschtliker	Washington, D. C	Hydrants	June 5, 1866.
53,036	Paul, Seth D	Lawrence, Mass	Spinning, mules for	Mar. 6, 1866.
52,073	Paulding, John	New York, N. Y	Type in making stereotype plates, mechanism for setting	Jan. 16, 1866.

55,209	Paye, Edward, assignor to self and Cornelius H. Delameter	....do	Boiler flanges, machine for turning	May 29, 1866.
53,037	Payne, D. H., and George Boxley	Troy, N. Y	Car coupling	Mar. 6, 1866.
57,181	Payne, E. M	Waverley, N. Y	Bed bottom	Aug. 14, 1866.
	Payne, H. M. (*See* Paterson, George W., assignor.)			
57,959	Peabody, Francis	Vevay, Ind	Sleds	Sept. 11, 1866.
	Peabody, G. W., and H. V. Davis. (*See* Davis & Peabody.)			
2,197	Peabody, H. O	Boston, Mass	Fire-arms, breach-loading (Reissue)	Mar. 13, 1866.
55,531	Peabody, Jefferson	Dixmont Centre, Maine	Valves	June 12, 1866.
56,462	Peabody, Washburn	....do	Harness	July 17, 1866.
53,177	Peacock, Jonathan	Rockford, Ill	Barrel-washing machines	Mar. 13, 1866.
56,793	Pearce Henry	San Francisco, Cal	Quartz mills	July 31, 1866.
52,193	Pearl, Oliver	Lawrence, Mass	Spinning frames, flyer-boards of	Jan. 23, 1866.
53,665	Same	....do	Bobbins, weft	Apr. 3, 1866.
53,038	Pease, Charles G	Charlestown, Mass	Photographic purposes, chair for	Mar. 6, 1866.
51,965	Pease, F. S	Buffalo, N. Y	Pumps	Jan. 9, 1866.
59,446	Pease, Francis S	....do	Carburetters	Nov. 6, 1866.
53,864	Pease, James H	Reading, Pa	Feed-water apparatus	Apr. 10, 1866.
54,764	Pease, J. N., assignor to Metropolitan Washing Machine Company	Panama, N. Y	Clothes wringer	May 15, 1866.
56,676	Pease, J. N., and G. Lewis, assignors to Metropolitan Washing Machine Company.	....do	Clothes wringer	July 24, 1866.
60,050	Pease, John W	Belmont, N. Y	Brick machine	Nov. 27, 1866.
60,548	Pease, Julius A	New York, N. Y	Tanning	Dec. 18, 1866.
60,549	Same	....do	Tanning, process for	Dec. 18, 1866.
	Pease, Warren H., and William Crane. (*See* Crane & Pease.)			
53,473	Peavey, A. J	South Montville, Maine	Pistol and pocket knife, combined	Mar. 27, 1866.
56,260	Peavey, Hollis M	Swanville, Maine	Digging potatoes, machine for	July 10, 1866.
	Peck, Deon E., and Frank E. Darrow. (*See* Darrow & Peck.)			
60,415	Peck, Enos H	Brownhelm, Ohio	Gates, farm	Dec. 11, 1866.
53,329	Peck, James I	Dansville, N. Y	Vehicles, seats for	Mar. 20, 1866.
52,194	Peck, Milo	New Haven, Conn	Low-water detectors	Jan. 23, 1866.
57,757	Peck, Nelson	Jay, N. Y	Scraper, earth	Sept. 4, 1866.
54,650	Peck, Obed, assignor to William A. Ives	Southington, Conn	Bit braces	May 8, 1866.
59,257	Peck, Samuel	West Haven, Conn	Washboards, rubber attachment to	Oct. 30, 1866.
60,236	Same	New Haven, Conn	Hat brims, springs for	Dec. 4, 1866.
57,758	Peckham, John	....do	Buckles	Sept. 4, 1866.
	Peebles, A. A., *et al.* (*See* Brown, John E., assignor.)			
57,182	Peeler, Abner, assignor to self, William A. Crosby, and N. P. Chipman.	Webster City, Iowa	Writing and printing, machine for	Aug. 14, 1866.
53,666	Peer, D. J	Rochester, N. Y	Dental-vulcanizing heaters	Apr. 3, 1866.
53,667	Same	....do	Flask, vulcanizing	Apr. 3, 1866.
	Peet, William. (*See* Hyde, James S.)			
53,474	Peirce, Isaac Newton	Philadelphia, Pa	Seat and desk for schools	Mar. 27, 1866.
59,258	Peirce, James E	West Boylston, Mass	Trace connection	Oct. 30, 1866.
59,447	Peirce, James M	Mokena, Ill	Churn and washing machine combined	Nov. 6, 1866.
52,195	Peirce, T. W	Minneapolis, Minn	Reaping machines, binding attachment to	Jan. 23, 1866.
53,475	Same	....do	Beehives	Mar. 27, 1866.
56,602	Pell, Henry W	Rome, N. Y	Wrenches, dies for forming heads of	July 24, 1866.
53,330	Pelsor, John	Brooklyn, Ill	Looms, hand	Mar. 20, 1866.
54,943	Pelton, Halsey	Erie, Pa	Lime kiln	May 22, 1866.
53,865	Pemberton, Henry	Alleghany, Pa	Saponifier	Apr. 10, 1866.
60,051	Same	....do	Alkali, caustic, boxes for putting up	Nov. 27, 1866.
	Pendergrast, M., and P. C. Kirk. (*See* Kirk & Pendergrast.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,899	Pendexter, Benjamin P.	Mechanics' Falls, Maine	Corn sheller and bean thresher	June 26, 1866.
	Penfield, R. H. and H. (*See* Billings, Orson, assignor.)			
59,639	Penn, Worden P.	Belleville, Ill.	Seeding machines	Nov. 13, 1866.
59,640	Pennell, L. C.	Portland, Maine	Skirt supporters, ladies'	Nov. 13, 1866.
	Pennewell, Wm. P., and Henry Reed. (*See* Reed & Pennewell.)			
56,677	Pennie, Henry, and E. A. Leland, assignors to Henry Pennie	New York, N. Y.	Stoves, gas	July 24, 1866.
	Penquite, J. F., and E. G. Ford. (*See* Ford & Penquite.)			
	Pequoit Machine Company. (*See* Ellis, Henry A., assignor.)			
52,196	Percheron, Victor	do.	Bag, travelling	Jan. 23, 1866.
51,858	Percival, George G.	Brooklyn, N. Y.	Telegraphs, hydro-pneumatic, for hotel annunciators	Jan. 2, 1866.
53,666	Same	do.	Electric piles, secondary. (Antedated March 9, 1866)	Apr. 3, 1866.
53,699	Same	do.	Lamps, electrical. (Antedated March 9, 1866)	Apr. 3, 1866.
56,603	Same	do.	Inkstand and calendar, combined. (Antedated July 19, 1866)	July 24, 1866.
52,595	Percival, L. C.	Philadelphia, Pa.	Wagon brake	Feb. 27, 1866.
52,197	Percy, George R.	New York, N. Y.	Milk and other substances, vacuum apparatus for condensing	Jan. 23, 1866.
58,472	Perdew, P. and H. A.	Seal, Ohio	Filter for sirup	Oct. 2, 1866.
58,284	Perin, Ezra	Connersville, Ind.	Roller and seed planter, combined	Sept. 25, 1866.
53,476	Perkins, Charles H.	Providence, R. I.	Iron, sheet, manufacture of	Mar. 27, 1866.
52,647	Perkins, Charles H., assignor to the Perkins Sheet-Iron Company	do.	Iron, sheet, plates, method of treating	Feb. 13, 1866.
	Perkins, Cook & Company. (*See* Gilbert, Thomas S., assignor.)			
55,701	Perkins, John	Providence, R. I.	Hullers, cotton seed	June 19, 1866.
	Perkins, J. B., and K. F. Worcester. (*See* Worcester & Perkins.)			
60,416	Perkins, John M., and Mark W. House	Cleveland, Ohio	Lamps	Dec. 11, 1866.
56,338	Perkins, Loftus	England	Heating and cooling air, &c., apparatus for	July 10, 1866.
53,866	Perkins, L. W.	Beloit, Wis.	Buckle	Apr. 10, 1866.
2,258	Perkins, Russell B., assignor to self and Charles Parker	Meriden, Conn.	Spoons, manufacture of (Reissue)	May 29, 1866.
51,859	Perkins, William M.	Lafontaine, Ind.	Ditching machine	Jan. 2, 1866.
52,879	Perley, Charles	New York, N. Y.	Bedstead	Feb. 27, 1866.
53,178	Same	do.	Windlass, vertical	Mar. 13, 1866.
	Perrin, Alphonse. (*See* Vergnes, Maurice, assignor.)			
56,860	Perrin, Franklin, assignor to self and D. C. Perrin	Cambridge, Mass.	Bleaching palm-leaf, straw, &c.	July 31, 1866.
51,860	Perrins, Thomas	Philadelphia, Pa.	Kite	Jan. 2, 1866.
	Perry, Charles, and Thomas Watson. (*See* Watson & Perry.)			
2,355	Perry, Charles A., assignor to self and Thomas Derry	Chicago, Ill.	Trade mark (Design)	July 10, 1866.
54,944	Perry, E. G.	Knoxville, Ill.	Medical compound	May 22, 1866.
53,477	Perry, F. L.	Canandaigua, N. Y.	Plants and vines, boxes for propagating	Mar. 27, 1866.
56,945	Perry, Francis W., and John H. Pierce	Woburn, Mass.	Extracts from bark, &c., apparatus for making	May 22, 1866.
53,867	Perry, George	Muscatine, Iowa	Cultivators	Apr. 10, 1866.
57,960	Perry, James	Leeds, Mass.	Wood, composition for filling	Sept. 11, 1866.
53,039	Perry, John G.	South Kingston, R. I.	Mowing machines	Mar. 6, 1866.
53,040	Same	do.	Reaping and mowing machines	Mar. 6, 1866.
53,478	Same	do.	Carriages, &c., poles and thills for	Mar. 27, 1866.
54,946	Same	do.	Harvesters	May 22, 1866.
60,550	Same	do.	Straw-cutters	Dec. 18, 1866.
52,497	Perry, Noah C., and Geo. S. Glading, assignors to Jeremy W. Bliss	Chester, Conn.	Door guards	Feb. 6, 1866.

56,091	Perry, Philander	Charlestown, Mass	Dough-kneader, meat-pounder, &c	July 3, 1866.
57,371	Perry, Samuel	New York, N. Y	Boot, ventilating	Aug. 21, 1866.
56,327	Perry, Samuel, assignor to Charles H. Fort	Troy, N. Y	Plough, furrowing	July 10, 1866.
56,794	Perry, Samuel M	Plainfield, N. J	Corsets. (Antedated July 20, 1866)	July 31, 1866.
59,641	Perry, Stuart	Newport, N. Y	Sawing machines	Nov. 13, 1866.
57,826	Peteler, Johann N., assignor to Alois Peteler	Bavaria	Railroads, portable	Sept. 4, 1866.
54,765	Peters, Daniel	Eaton, Ohio	Broom head	May 15, 1866.
57,561	Peter, N	New York, N. Y	Medicines	Aug. 28, 1866.
58,359	Petre, John, jr., and James Teal	England	Wool-washing machines, lifting cylinders of	Sept. 25, 1866.
57,183	Petrie, Sherman	Buffalo, N. Y	Vessels, sunken, derrick for raising	Aug. 14, 1866.
52,596	Pettengill, Job W	Rockford, Ill	Jacks, lifting	Feb. 13, 1866.
58,285	Same	do	Cars on the track, device for moving	Sept. 25, 1866.
60,237	Pettes, M. M	Oxford, Mass	Saw teeth, machine for filing	Dec. 4, 1866.
60,551	Petteys, E., and T. C. Leggett	Chestertown, N. Y	Gates	Dec. 18, 1866.
53,179	Pettibone, S	Corunna, Mich	Feed-cutters	Mar. 13, 1866.
58,129	Same	do	Straw-cutters	Sept. 18, 1866.
52,198	Pettigrew, David L., assignor to self and Jacob Smith	Claremont, N. H	Rack, sheep	Jan. 23, 1866.
52,315	Pettingell, B. F	Newburyport, Mass	Leather, cement for	Jan. 30, 1866.
54,766	Pettit, Oliver S	Brooklyn, N. Y	Water-closets	May 15, 1866.
56,795	Petty, J. W	New Orleans, La	Tobacco-pipe	July 31, 1866.
2,456	Peugeot, Edward F	Chicago, Ill	Trade-mark (Design)	Sept. 25, 1866.
59,528	Peugeot, Emile, and J. B. B. C. Laurent	France	Mills, grinding	Nov. 6, 1866.
51,966	Peugeot, George	Buffalo, N. Y	Lanterns	Jan. 9, 1866.
56,604	Same	do	Lanterns, hand	July 24, 1866.
2,491	Peyser, Morris M	Boston, Mass	Shawl border (Design)	Oct. 9, 1866.
2,492	Same	do	Shawl border (Design)	Oct. 9, 1866.
59,725	Peyton, Joseph I, assignor to J. P. Torbert	Washington, D. C	Horseshoes	Nov. 13, 1866.
57,759	Pfeifer, John	Philadelphia, Pa	Shovel, coal, handle for	Sept. 4, 1866.
	Same. (*See* Thomson, Smith & Jennings, assignors.)			
57,184	Pfeiffer, Frederick P	Philadelphia, Pa	Alloy	Aug. 14, 1866.
	Pfeil, Daniel. (*See* Schwarze, Joseph R. B., assignor.)			
51,967	Pflegar, Frank P., and William Schollhorn	New Haven, Conn	Compasses and calipers	Jan. 9, 1866.
56,796	Phelan, William	Peoria, Ill	Steam generators	July 31, 1866.
58,286	Phelps, David N	San Leandro, Cal	Traps, animal	Sept. 25, 1866.
	Phelps, Ebenezer, W	Elizabeth, N. J	Beehives, moth-traps to (Extension)	Apr. 5, 1866.
58,473	Phelps, Harvey, and Alvah	Albany, N. Y	Soap, apparatus for cutting and stamping	Oct. 2, 1866.
59,642	Phelps, James, assignor to self and Isaac F. Mosher	Red Creek, N. Y	Carriages, king-bolts for	Nov. 13, 1866.
59,318	Phelps, James N., assignor to self and Joseph Bailey	Brooklyn, N. Y	Telegraph cables. (Antedated October 16, 1866)	Oct. 30, 1866.
56,463	Phelps, O. C	New York, N. Y	Hand-cuff, adjustable	July 17, 1866.
56,341	Phelps, T. V	Worcester, Mass	Skirt, dress, elevators, ladies'	July 10, 1866.
	Phifer, Edward, and Henry R. Fell. (*See* Fell & Phifer.)			
	Philbrick, William D., *et al.* (*See* Prentiss, E. F., *et al.*, &c.)			
	Reissue.			
	Same.			
	Same. (*See* Prentiss, Robertson, &c.)			
	Same.			
53,180	Philbrook, Ignatius	Shelby Co., Ill	Corn huskers	Mar. 13, 1866.
58,130	Philippi, Pompeius	Beard-town, Ill	Gates, fastenings for	Sept. 18, 1866.
59,643	Philler, W. W	Port Byron, Ill	Cultivator	Nov. 13, 1866.
60,052	Phillips, Dewey	Manchester, Vt	Water-wheels, reaction, regulators for	Nov. 27, 1866.
52,367	Phillips, Ezekiel, and Henry C., assignors to Ezekiel Phillips	Blackstone, Mass	Looms, picker, staff-arrester for	Jan. 30, 1866.
	Phillips, Henry J. (*See* Tanner, A., assignor.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,591	Phillips, John E	Philadelphia, Pa	Brooms, preparing wisps for. (Antedated January 11, 1866)	May 8, 1866.
60,053	Phillips, L. D	New York, N. Y	Buttons, machines for making. (Antedated Nov. 11, 1866.)	Nov. 27, 1866.
	Phillips, Oliver K. (*See* Ross, Levi, assignor.)			
	Phillips, Thomas. (*See* Cooper, Theodore, assignor.)			
56,989	Phleger, L., and George G. Lobdell	Philadelphia, Pa / Wilmington, Del	Wells, obtaining oil from. (Antedated August 2, 1866)	Aug. 7, 1866.
54,947	Piatt, William M	West Liberty, Ohio	Rakes, horse	May 22, 1866.
52,655	Picard, Barthelemy	France	Tanning, hides and skins, process of	Feb, 13, 1866.
52,316	Pickard, Daniel L	Rochester, N. Y	Lamps	Jan. 30, 1866.
54,767	Pickering, Barton	Dayton, Ohio	Ladder	May 15, 1866.
55,900	Same	Milton, Ohio	Water closets	June 26, 1866.
60,417	Same	do	Air with gasoline, apparatus for charging	Dec. 11, 1866.
57,760	Pickering, Burrill, Edwin, and Barton	West Milton, Ohio / do. / Montgomery county, Ohio	Pump pistons	Sept. 4, 1866.
59,063	Pickering, Charles	St. Louis, Mo.	Lead from dross, method of obtaining	Oct. 23, 1866.
53,331	Pickett, Rufus S	New Haven, Conn	Garments, fastenings for	Mar. 20, 1866.
54,009	Same	do	Water tank, self-feeding	Apr. 17, 1866.
54,592	Pickhardt, J. F. C	New York, N. Y	Bedstead, sofa	May 8, 1866.
59,644	Pickslay, William M	Philadelphia, Pa	Bars and articles of iron and steel combined, manufacture of	Nov. 13, 1866.
59,645	Picot, Leonce	Hoboken, N. J	Combs	Nov. 13, 1866.
2,437	Picot, Leonce, assignor to Rubber Clothing Co	do	Comb, long, child's (Design)	Sept. 25, 1866.
2,482	Same	do	Comb, long, child's (Design)	Oct. 2, 1866.
2,483	Same	do	Comb, long, child's (Design)	Oct. 2, 1866.
2,493	Same	do	Comb, long, child's (Design)	Oct. 9, 1866.
2,496	Same	do	Comb, long, child's, ornamenting a (Design)	Oct. 23, 1866.
58,131	Pidgin, C. F	Boston, Mass	Shirt bosoms	Sept. 18, 1866.
57,961	Pierce, Almeron	Olmstead, Ohio	Harrow and marker, combined	Sept. 11, 1866.
57,962	Same	Olmstead Falls, Ohio	Car coupling	Sept. 11, 1866.
53,670	Pierce, Charles L	Buffalo, N. Y	Sawing machines	Apr. 3, 1866.
54,010	Same	do	Shingle machines	Apr. 17, 1866.
55,702	Same	do	Shingle machines	June 19, 1866.
58,132	Same	do	Ash sifters	Sept. 18, 1866.
58,474	Pierce, Charles W	Albany, N. Y	Grate bar	Oct. 2, 1866.
53,479	Pierce, D. C	Clayton, N. Y	Railroad rail	Mar. 27, 1866.
	Pierce, Isaac, *et al.* (*See* Parker, James H., assignor.)			
	Pierce, John, *et al.* (*See* Carver, J. E., assignor.)			
53,085	Pierce, John F., assignor to self, Isaac Pierce, and James S. Hall	Holland Patent, N. Y	Hay-forks, horse	Mar. 7, 1866.
	Pierce, John H., and Francis W. Perry. (*See* Perry & Pierce.)			
54,400	Pierce, Samuel	Cambridge, Mass	Stoves, cooking	May 1, 1866.
	Pierce, Samuel B., and J. Severence Stewart. (*See* Stewart & Pierce.			
54,948	Pierpont, Asahel	New Haven, Conn	Boot-jack	May 22, 1866.
58,881	Pierson, W. H	West Jersey, Ill	Beehives	Oct. 16, 1866.
55,532	Pike, Charles F	Providence, R. I	Oil, &c., refrigerator for cooling	June 12, 1866.

60,552	Same	....do	Meats, fish, vegetables, and other substances, apparatus for cooling and preserving.	Dec. 18, 1866.
53,671	Pike, Gustavus D	Chatham, Conn	Clasp, spring-lever	Apr. 3, 1866.
52,794	Pike, Nicholas, assignor to Emma Taylor	Brooklyn, N. Y	Traps, fly. (Antedated February 5, 1866)	Feb. 20, 1866.
52,317	Pike, Robert G	Middletown, Conn	Mowing machines	Jan. 30, 1866.
54,201	Same	....do	Bottles, stopper for	Apr. 24, 1866.
57,761	Same	New York, N. Y	Electricity, lighting gas by	Sept. 4, 1866.
56,150	Pike, S. B., assignor to self and Robert H. Vance	San Francisco, Cal	Quartz crushers	July 3, 1866.
60,553	Pike, S. Montgomery	Cincinnati, Ohio	Filter, coolers	Dec. 18, 1866.
59,777	Pike, William G	Philadelphia, Pa	Valve gear, cut-off	Nov. 20, 1866.
	Pilkington, James E. (*See* Wright, William M., assignor.)			
53,480	Pilling, Frederick	Washington, D. C	Curtain-rollers, hub or spool for	Mar. 27, 1866.
59,259	Pilson, Robert	Laurel, Md	Carding engines, machines for preparing cotton for	Oct. 30, 1866.
55,589	Pimer, Thomas, assignor to Henry W. Putnam	New London, Conn	Bottle-stopper	June 12, 1866.
60,238	Pimlott, William	Syracuse, N. Y	Lathe dogs	Dec. 4, 1866.
	Pincus, E., *et al.* (*See* Rehfuss, George, assignor.)			
58,882	Pinder, Charles	Lowell, Mass	Egg beater	Oct. 16, 1866.
57,762	Pine, James H. P	Troy, N. Y	Neck-ties	Sept. 4, 1866.
52,741	Pinkerman, William	Bridgeport, Conn	Chairs, detachable rockers for. (Antedated February 16, 1866.)	Feb. 20, 1866.
60,239	Pinnell, Isaac A	Galva, Ill	Water elevators	Dec. 4, 1866.
53,181	Pinner, Moritz	New York, N. Y	Blowpipe, self-acting	Mar. 13, 1866.
58,673	Same	....do	Collars and bosoms, paper	Oct. 9, 1866.
59,260	Pinner, William H	....do	Soap kettles, rendering-apparatus, &c., for preventing the escape of gases, apparatus for.	Oct. 30, 1866.
56,990	Piper, D. B	Winchendon, Mass	Sewing machines	Aug. 7, 1866.
53,672	Piper, Joseph L	Winthrop, Mass	Tree protectors	Apr. 3, 1866.
	Piper, Margaret M. (*See* Lewine, Isaac, assignor.)			
60,054	Piper, Samuel G	Lynn, Mass	Stoves, cooking	Nov. 27, 1866.
52,444	Pirrson, William	Newark, N. J	Wrenches, ratchet	Feb. 6, 1866.
55,157	Same	....do	Wrenches, ratchet	May 29, 1866.
60,055	Pitcher, Leman B	Salina, N. Y	Mortar mill	Nov. 27, 1866.
59,448	Pitezel, John H	Three Rivers, Mich	Sewing clamps	Nov. 6, 1866.
	Pitman, George W., and Edwin Lockwood. (*See* Lockwood & Pitman.)			
52,445	Pitts, John B	Salem, Ind	Seeding machines	Feb. 6, 1866.
55,782	Pixly, Agur, and John Robertson, assignors to Robertson, Dow & Co.	Brooklyn, N. Y	Hydrants	June 19, 1866.
	Pixley, E. S. (*See* Whitmore, G. E., assignor.)			
56,605	Place, Oscar	....do	Flour packers	July 24, 1866.
	Plaisted, James H. (*See* Currier, John J., assignor.) Same. (*See* Currier & Wells, assignors.)			
56,861	Plant, Pascal, assignor to self and Peter Hannay	Washington, D. C	Roasters, coffee	July 31, 1866.
	Platt, Alfred	Waterbury, Conn	Fans, buckwheat (Extension)	Jan. 12, 1866.
57,963	Platt, Alfred C	Oberlin, Ohio	Photographs, apparatus for drying	Sept. 11, 1866.
57,763	Platt, Anson H	Ann Arbor, Mich	Floor covering	Sept. 4, 1866.
56,261	Platt, Clark M	Waterbury, Conn	Buttons	July 10, 1866.
54,011	Platt, G. R	Brooklyn, N. Y	Well, oil, drill	Apr. 17, 1866.
	Platt J. L. (*See* Kerr, Edwin R., assignor.)			
55,901	Plimpton, James L	New York, N. Y	Skate	June 26, 1866.
52,597	Plotts, J. N	....do	Buckles	Feb. 13, 1866.
55,532	Same	....do	Buckles	June 12, 1866.
2,598	Plumb, Joseph	Clarksville, N. J	Furrowing device for corn planting	Feb. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
57,372	Plumb, Luke A	Biddeford, Maine	Pots, tea and coffee	Aug. 21, 1866.
52,074	Plumer, Isaac L	Chelsea, Mass	Trunks	Jan. 16, 1866.
51,861	Plumer, J. C	Boston, Mass	Jack, carriage	Jan. 2, 1866.
51,968	Same	do	Boots and shoes. (Antedated December 26, 1865.)	Jan. 9, 1866.
53,332	Same	do	Hoes	Mar. 20, 1866.
54,949	Same	do	Vegetable-slicer	May 22, 1866.
55,358	Same	do	Caster, for furniture	June 5, 1866.
59,778	Same	do	Wire, dies for cutting and pointing. (Antedated Nov. 10, 1866)	Nov. 20, 1866.
	Plummer, C. M. (*See* Mitchell, John B., assignor.)			
59,514	Plummer, Frank J., assignor to R. Ball & Co	Worcester, Mass	Planing machines, feed-roller for	Nov. 6, 1866.
59,925	Pocock, John H	Chicago, Ill	Coal hod	Oct. 23, 1866.
53,548	Polain, Prosper	Belgium	Fire-arms, revolving	Mar. 27, 1866.
56,606	Pollard, Frederick R	Canaan, N. H	Carriage tongues, shackle for	July 24, 1866.
58,287	Pollak, Morris	New York, N. Y	Watch-chain hook	Sept. 25, 1866.
55,703	Polley, Clark	Sinking Springs, Ohio	Straw cutters	June 19, 1866.
54,768	Pollock, Alexander	New York N. Y	Valves, safety	May 15, 1866.
60,056	Polsey, Arlon M., assignor to T. H. Fuller	Boston, Mass	Nails, machines for making	Nov. 27, 1866.
	Pomeroy, E. Miner, and Henry G. Smith. (*See* Smith & Pomeroy.)			
2,362	Pomeroy, Noah	Hartford, Conn	Clock case, door of a (Design)	July 17, 1866.
55,960	Pomeroy, Thomas W., assignor to self and Wm. J. Layman	East Hampton, Mass	Churns and ice-cream freezers	June 26, 1866.
	Pomroy, Daniel. (*See* Chase, J. D., D. and J., assignors.)			
55,704	Pond, Alvin	Southington, Conn	Hammer, tack	June 19, 1866.
56,092	Pond, C. N	Oberlin, Ohio	Lamp-chimney, bottle, or can cleaner	July 3, 1866.
	Pond, Erasmus N	Rutland, Vt	Pill-making machines (Extension)	Nov. 27, 1866.
53,481	Pond, E. A., and M. S. Richardson	do	Air, apparatus for carburetting	Mar. 27, 1866.
53,482	Same	do	Gas apparatus	Mar. 27, 1866.
55,359	Same	do	Gas, illuminating, generating, and supplying	June 5, 1866.
59,515	Pond, John N., assignor to W. Holt and John L. White	Wakefield, Va	Ploughs	Nov. 6, 1866.
51,862	Pond, Joseph F	Cleveland, Ohio	Clothes-wringers	Jan. 2, 1866.
2,174	Same	do	Wringers, rollers for (Reissue)	Feb. 13, 1866.
54,950	Pond, Julius R	New Hartford, Conn	Milk, &c., method of preparing vacuum vessels for condensing	May 22, 1866.
	Pond, L. W. (*See* Brown, A. P., assignor.)			
	Pond, L. W., *et al.* (*See* Hill, Edwin H., assignor.)			
2,344	Pond, Martin W., and Henry E. Mussey, assignors to Martin W. Pond.	Elyria, Ohio	Straps, breast, metallic shields for (Reissue)	Aug. 28, 1866.
54,769	Pool, G. H	New York, N. Y	Churn dasher	May 15, 1866.
58,133	Poor, Chandler	Dubuque, Iowa	Dental mallets	Sept. 18, 1866.
60,240	Pope, A. J	Strongsville, Ohio	Churns	Dec. 4, 1866.
	Porrier, Z., *et al.* (*See* Bailly, Durand, Mesnard & Porrier.)			
	Porritt, J., and B. Whysall. (*See* Whysall & Porritt.)			
53,868	Porter, Benjamin	Jackson, Mich	Clay, machine for grinding	Apr. 10, 1866.
52,599	Porter, B. F	Nashua, N. H	Collars, paper, button-holes for	Feb. 13, 1866.
57,964	Porter, Benjamin F	Manchester, N. H	Table-stand for food	Sept. 11, 1866.
51,863	Porter, Benjamin F., and H. M. Glines	do	Table-stand for articles of food	Jan. 2, 1866.
57,373	Porter, Charles H	Providence, R. I	Stove-cover lifter	Aug. 21, 1866.

57,965	Porter, D'Arcy	Cleveland, Ohio	Rack and shed, sheep, combined	Sept. 11, 1866.
53,333	Porter, E. H	New Britain, Conn	Buttons, swivel. (Antedated March 9, 1866)	Mar. 20. 1866.
56,443	Porter, John	Ruggles, Ohio	Wool, machine for folding fleeces of	July 17, 1866.
57,562	Porter, Michael C. E., and G. F. Jenkins	Terre Haute, Ind	Cultivators	Aug. 28, 1866.
52,600	Porter, T. W	Bangor, Maine	Vehicles	Feb. 13, 1866.
55,705	Same	do	Sleighs	June 19, 1866.
59,261	Postawka, Louis	Boston, Mass	Seat, piano	Oct. 30, 1866.
54,401	Postawka, Louis, and Anton Krasinski	do	Seat, piano	May 1, 1866.
56,262	Potter, H. H	Carthage, N. Y	Alarm, burglar	July 10, 1866.
57,563	Potter, H. S	Fairfield, Iowa	Cultivators, corn	Aug. 28, 1866.
59,064	Potter, Lyman B	Putnam, Conn	Gearing, intermittent and expansive	Oct. 23, 1866.
54,402	Potter, Nathaniel F	Providence, R. I	Peat machine	May 1, 1866.
55,360	Potter, S. T. W	Scott, N Y	Churns	June 5, 1866.
56,444	Potter, William L	Clinton Park, N. Y	Roofing cement	July 17, 1866.
59,065	Same	do	Roofing material	Oct. 23, 1866.
	Potts, E. (*See* Cline, John C., assignor.)			
55,534	Poucin, Peter	Minneapolis, Minn	Medical compound	June 12, 1866.
60,554	Poulson, Britton	Fort Wayne, Ind	Fan, brush and rack	Dec. 18, 1866.
56,263	Pountney, William	Brooklyn, N. Y	Cruet bottles, manufacture of	July 10, 1866.
	Powel, H. M., and Eli P. Newbanks. (*See* Newbanks & Powel.)			
59,646	Powel, Charles W	Milford, Conn	Collar and neck tie attachments	Nov. 13, 1866.
59,647	Powell Isaac A	Morrison, Ill	Collars, horse	Nov. 13, 1866.
2,258	Powell, James	Cincinnati, Ohio	Medallion of General Grant (Design)	Jan. 30, 1866.
59,648	Same	do	Medallions, case for	Nov. 13, 1866.
54,593	Powell, Martin L	Newcastle, Ind	Indexes, universal	May 8, 1866.
	Powell, Van Rensselaer. (*See* Edgecomb, Luther B., assignor.)			
54,202	Powers, Rufus	Prescott, Mass	Alarm, fire	Apr. 24, 1866.
58,883	Powers, Thomas D	Rochester, Wis	Car coupling	Oct. 16, 1866.
54,254	Powers, Timothy J., assignor to J. P. Fitch and J. R. Van Vechten	New York, N. Y	Cartridges, metallic, method of priming	Apr. 24, 1866.
54,255	Same	do	Cartridge cases, machine for making	Apr. 24, 1866.
57,258	Same	do	Cartridges, metallic, machine for priming	Aug. 14, 1866.
58,176	Powers, William A. and Thomas B., assignors to Wm. A. Powers	Brooklyn, N. Y	Piston-packing	Sept. 18, 1866.
52,880	Prall, William Edgar	Knoxville, Tenn	Cotton, machine for picking	Feb. 27, 1866.
54,951	Same	do	Harvesters, corn	May 22, 1866.
2,424	Same	Washington, D. C	Cotton, machine for pickling (Reissue.)	Dec. 18, 1866.
59,066	Prall, W. J	Pomeroy, Ohio	Oil cans	Oct. 23, 1866.
55,158	Prang, Louis	Boston, Mass	Alkali, caustic, manufacture of	May 29, 1866.
	Pratt and Letchworth. (*See* Letchworth, Josiah, assignor.)			
	Same. (*See* Forbush & Letchworth, assignors.)			
	Pratt, A. W., and S. Case. (*See* Case & Pratt.)			
54,952	Pratt, D. A	New York, N. Y	Locks	May 22, 1866.
54,953	Same	do	Fastenings, sash	May 22, 1866.
59,449	Pratt, E. L	Boston, Mass	Aerating and mixing substances, apparatus for	Nov. 6, 1866.
59,450	Same	do	Sieve	Nov. 6, 1866.
60,418	Pratt, Francis A	Hartford, Conn	Sewing machines	Dec. 11, 1866.
56,264	Pratt, Joel B	Corning, N. Y	Knife sharpeners	July 10, 1866.
	Pratt, Joseph, and Charles C. Wentworth. (*See* Simpson, Robert, assignor.			
60,419	Pratt, Miles	Boston, Mass	Stove boiler	Dec. 11, 1866.
56,862	Pratt, Milon, assignor to self and Clemens Darnstaedt	Meriden, Conn	Key boards, ivory, machine for smoothing	July 31, 1866.
60,057	Pratt, Orrin	Athol, Mass	Wells, tubular, method of sinking	Nov. 27, 1866.
2,156	Pratt, Randal	Marple Township, Pa	Rakes, horse (Division 4, reissue)	Jan. 23, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Pratt, Silas, and E. S. Russell. (*See* Davis, George W., assignor.)			
59,067	Pratt, Thomas	Valparaiso, Ind	Tire-shrinking machines	Oct. 23, 1866.
	Pratt, Whitney & Co. (*See* Stannard, Monroe, assignor.)			
59,068	Pratt, W. H	Davenport, Iowa	Washing machines, heater for	Oct. 23, 1866.
53,483	Preble, Amaziah M	Lynn, Mass	Shoes, gaiter	Mar. 27, 1866.
56,508	Prefontaine, P. C. P. L	France	Liquids, hydrocarbon and other materials, storing	July 17, 1866.
57,374	Preiss, William	New York, N. Y	Sewing machines, folding and plaiting, device for	Aug. 21, 1866.
54,203	Prentiss, E. Freeman	Philadelphia, Pa	Mordant	Apr. 24, 1866.
56,797	Prentiss, E. F., and C. C. Parsons	do	Whiskey, &c., apparatus for purifying and deodorizing	July 31, 1866.
56,863	Prentiss, E. F., and R. A. Robertson, assignors to W. D. Philbrick and W. J. Parsons.	do	Whiskey, process for purifying and deodorizing	July 31, 1866.
56,864	Same	do	Whiskey, apparatus for purifying and deodorizing	July 31, 1866.
2,316	Same	do	Distilling rock oils and other hydrocarbons, process for. (Division 1, reissue.)	July 17, 1866.
2,317	Same	do	Distilling rock oil and other hydrocarbons, apparatus for. (Division 2, reissue.)	July 17, 1866.
54,204	Presbrey, Joseph L	Taunton, Mass	Crucibles, apparatus for moulding	Apr. 24, 1866.
59,516	Prescott, James S., assignor to self and S. B. Gowell	North Berwick, Maine	Cupboard, portable	Nov. 6, 1866.
	Preston, J. W., and R. S. Lewis. (*See* Sickels, Gerard, assignor.)			
52,601	Preston, John S	Mechanicsville, Pa	Hay, machines for raking and loading	Feb. 13, 1866.
	Preston, O. W., and Charles Barry. (*See* Barry & Preston.)			
56,798	Price, Benjamin	Leesville, Ohio	Ploughs	July 31, 1866.
	Price, E. (*See* Weaver, William, assignor.)			
55,902	Price, Isaac T	do	Hay forks, horse	June 26, 1866.
58,288	Same	do	Churns	Sept. 25, 1866.
59,262	Price, Jackson	Greenfield, Ind	Ploughs	Oct. 30, 1866.
52,318	Price, John	New Harrisburg, Ohio	Planters, cotton seed	Jan. 30, 1866.
60,420	Price, John P., assignor to Frank K. Hipple	Philadelphia, Pa	Iron and steel, welding of	Dec. 11, 1866.
	Price, Joseph M. P. (*See* Marchbank, John, assignor.)			
53,182	Price, Thomas, and James H. Wilson	Covington, Ky	Engines, locomotive sand boxes for. (Antedated March 5, 1866.)	Mar. 13, 1866.
59,263	Price, Thomas D	Carrollton, Ill	Drills, seed	Oct. 30, 1866.
52,199	Price, Thomas J	Auburn, Ky	Straw cutters	Jan. 23, 1866.
54,403	Price, T. J	South Union, Ky	Separators, grain	May 1, 1866.
57,185	Price, Thomas J	Auburn, Ky	Seeder and cultivator, combined	Aug 14, 1866.
54,594	Priest, David H	Watertown, Mass	Fruit basket	May 8, 1866.
56,607	Priest, V. T	Decatur, Ill	Drill rods, collars for	July 24, 1866.
55,706	Priestly, John, and Thomas C. Bradbury	New York, N. Y. / Poughkeepsie, N. Y.	Paper pulp from straw, process of preparing	June 19, 1866.
	Prince, Frederic A., and Stephen A. Emery. (*See* Emery & Prince.)			
	Prince, G. A., *et al.* (*See* Rollins, J. A., assignor.) Reissue.			
	Prince, George A., & Co. (*See* Hoddick, Frederick, assignor.)			
	Prince, M., *et al.* (*See* Smith, John W., assignor.)			
52,200	Prince, Thomas	Roxbury, Mass	Flower pots, support for	Jan. 23, 1866.
57,375	Prindle, E. T	Aurora, Ill	Piston packing	Aug. 21, 1866.

53,542	Prindle, Edward T., assignor to self and James Walker	....do	Piston-rod packing	Mar. 27, 1866.
52,742	Prindle, George S	....do	Piston-rod packing	Feb. 20, 1866.
54,954	Proctor, Levi H	East Saugus, Mass	Shoe jack	May 22, 1866.
53,233	Proctor, Milo J., assignor to self and Wheeler Tilton	Lowell, Mass	Labels, direction	Mar. 13, 1866.
2,254	Prosser, Thomas	New York, N. Y	Condensers, surface (Division A, reissue)	May 22, 1866.
2,255	Same	....do	Condensers, surface (Division B, reissue)	May 22, 1866.
	Prosser, T., & Son. (*See* King, Robert, assignor.)			
56,608	Prosser, Thomas C	Bay City, Mich	Bricks, making	July 24, 1866.
56,609	Prosser, Treat T	Chicago, Ill	Boiler for culinary purposes	July 24, 1866.
57,564	Prosser, T. T., and James Lawson	....do	Knife and scissors sharpener	Aug. 21, 1866.
57,966	Prosser, T. T., assignor to self, D. A. Kimbark, D. W. Wells, J. A. Eastman, and G. W. Gillette.	....do	Screws	Sept. 11, 1866.
58,134	Prosser, T. T., assignor to self, G. W. Gillette, J. A. Eastman, D. Kimbark, jr., and D. H. Wells.	....do	Screws, machines for making	Sept. 18, 1866.
2,458	Protz, John	Easton, Pa	Hook, snap (Design)	Sept. 25, 1866.
56,610	Proud, James	New York, N, Y	Collar, shirt, attachment	July 24, 1866.
52,795	Prouty, Russel, assignor to J. Elder and J. B. Wilson	Springfield, Iowa	Fence	Feb. 20, 1866.
54,012	Prudden, Condit	Philadelphia, Pa	Wood-bending machines	Apr. 17, 1866.
56,445	Pruett, William	Kokomo, Ind	Tenon machines	July 17, 1866.
52,743	Prugh, George W., and William H. Beard	Armington, Ill	Cultivators	Feb. 20, 1866.
57,565	Pryibil, Paul	New York, N. Y	Saw-mills	Aug. 28, 1866.
53,334	Puffer, A. D	Somerville, Mass	Mosquito guard	Mar. 20, 1866.
54,595	Same	....do	Bedsteads, mosquito guards for	May 8, 1866.
57,967	Puffer, Stephen	Oxford, N. Y	Gates	Sept. 11, 1866.
53,041	Puffer, Stephen, assignor to self and William H. Lyon	....do	Bedsteads, invalid	Mar. 6, 1866.
	Pugh. John W., and George E. Corbin. (*See* Corbin & Pugh.)			
2,340	Pugsley, John G	New York, N. Y	Car spring (Reissue.)	Aug. 21, 1866.
	Pullman, George M. (*See* Field, Ben., assignor.)			
54,478	Pullman, Nathaniel	New Oregon, Iowa	Cars upon tracks, switch for replacing	May 1, 1866.
57,764	Pulte, Joseph H	Cincinnati, Ohio	Cement, apparatus for spreading	Sept. 4, 1866.
59,649	Punchies, Daniel	Plymouth, Mich	Bed-bottom spring	Nov. 13, 1866.
60,555	Punderford, James, and James A	New Haven, Conn	Leather hose, manufacture of	Dec. 18, 1866.
54,596	Purdy, C	Bedford, Ohio	Gates	May 8, 1866.
2,413	Pusey, John G., assignor, through mesne assignments, to the New York Engraving and Carving Company.	New York, N. Y	Gun stocks, machines for boring and drilling (Reissue)	Dec. 4. 1866.
54,770	Purves, Thomas B	Greenbush, N. Y	Railroad switch	May 15, 1866.
55,707	Putnam, A	Owego, N. Y	Drills, grain	June 19, 1866.
58,135	Same	....do	Planters, corn	Sept. 18, 1866.
	Putnam, Henry W. (*See* Pimer, Thomas, assignor.)			
57,046	Putnam, Salmon W., assignor to the Putnam Machine Company	Fitchburg, Mass	Sawing machines	Aug. 7, 1866.
59,779	Putnam, Silas S	Dorchester, Mass	Carriages, self-lubricating axle-box for	Nov. 20, 1866.
2,378	Putnam, Silas S., assignor to S. Putnam & Co	....do	Trade mark (Design)	Aug. 7, 1866.
54,256	Putnam, Silas S., and Lucius H. Dwelley, assignors to S. S. Putnam & Co.	....do	Nail, horseshoe, machines	Apr. 24, 1866.
52,201	Pye, Francis B	Trenton, N. J	Latches, knob	Jan. 23, 1866.
2,351	Pye, Thomas, assignor to William Earl, jr	Nashua, N. H	Spinning machines (Reissue)	Sept. 4, 1866.
53,484	Pyle, William M	Greensburg, Ind	Churn attachments	Mar. 27, 1866.
	Qualter, John, and George Bower. (*See* Bower & Qualter.)			
57,566	Quest, Samuel S	Wellsburg, West Va	Car coupling	Aug. 28, 1866.
59,136	Quick, Elias B., assignor to self and G. T. Palmer	Brooklyn, N. Y	Trunk	Oct. 23, 1866.
54,955	Quick, George, and John N. Wallis	Fleming, N. Y	Car coupling	May 22, 1866.
58,177	Quick, John A., assignor to self and Charles R. Holliday	South Danville, N. Y	Ploughs	Sept. 18, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,597	Quick, Thomas H	New York, N. Y	Sugar in sugar refineries, machine for stirring and dissolving	May 8, 1866.
54,771	Same	do	Bone-black, purifying	May 15, 1866.
54,013	Quimby, James F	Stetson, Maine	Churns	Apr. 17, 1866.
56,446	Quimby, M., and J. C. Sturdevant	Eddy, Pa	Broom heads	July 17, 1866.
57,567	Quinby, W. F	Wilmington, Del	Blacking	Aug. 28, 1866.
58,289	Quinby, W. F., and George G. Lobdell	do	Diggers, rotary	Sept. 25, 1866.
60,421	Quincy, Edmund W	Lacon, Ill	Dice boxes	Dec. 11, 1866.
	Quincy, George H., *et al.* (*See* Savage, Elliot, assignor.) Same.			
	Quincy, George H., and George S. Harwood. (*See* Clissold, William, assignor.) Reissue.			
	Quinn, Bernard B., and George W. Cornell. (*See* Cornell & Quinn.)			
52,376	Quinn, Emmett	Washington, D. C	Boiler feeders, automatic	Jan. 30, 1866.
53,042	Same	do	Boiler feeders, automatic. (Antedated February 3, 1866)	Mar. 6, 1866.
53,183	Same	do	Steam gauges	Mar. 13, 1866.
53,485	Same	do	Boring machines	Mar. 27, 1866.
53,486	Same	do	Wood, tools for turning	Mar. 27, 1866.
58,475	Same	do	Petroleum, &c., storing	Oct. 2, 1866.
56,265	Quinn, J., and C. Summers	Columbus, Ohio	Hook, snap	July 10, 1866.
53,673	Quinn, Peter	Philadelphia, Pa	Railroad frog	Apr. 3, 1866.
53,674	Same	do	Railroad switch	Apr. 3, 1866.
53,675	Same	do	Railways, combined switch and frog for	Apr. 3, 1866.
52,744	Quirolo, Antonio	New York, N. Y	Stereoscope	Feb. 20, 1866.
52,319	Race, George	Norwich, N. Y	Seeders, broadcast	Jan. 30, 1866.
53,676	Same	do	Water elevators	Apr. 3, 1866.
54,084	Same	do	Hay loaders	Apr. 17, 1866.
55,903	Radley, James	New York, N. Y	Lamps, locomotive	June 26, 1866.
55,904	Same	do	Lights, head, engine	June 26, 1866.
59,650	Same	do	Lights, head, locomotive	Nov. 13, 1866.
55,018	Rae, Julis H., assignor to self and Edwin L. Buttrick	Syracuse, N. Y	Peat machine	May 22, 1866.
54,205	Rafael, R	New York, N. Y	Steam generators	Apr. 24, 1866.
52,602	Raffel, A	do	Skirt, hoop, frames	Feb. 13, 1866.
56,447	Rahmer, Charles L	Brooklyn, N. Y	Hats	July 17, 1866.
57,376	Raht, William L	Baltimore, Md	Ores, metalliferous, treating	Aug. 21, 1866.
59,621	Rains, Henry A	Nashville, Tenn	Saddles, cart harness	Nov. 13, 1866.
	Rains, H. A., and A. P. Adams	Nashville, Tenn / Newark, N. J	Saddle, cart	Oct. 16, 1866.
58,885	Raitt, George W	Cincinnati, Ohio	Carriages, dress guard for	Oct. 16, 1866.
	Ralph, William, and J. Carton. (*See* Carton & Ralph.)			
54,014	Ralston, Andrew	West Middletown, Pa	Oil, floating, apparatus for collecting	Apr. 17, 1866.
53,869	Ralston, Robert	Kalamazoo, Mich	Animals, small, as sheep, hogs, &c., instrument for seizing and holding.	Apr. 10, 1866.
55,708	Ralya, John J	Allegheny, Pa	Stave machines	June 19, 1866.
59,069	Ramm, Frederick E	Philadelphia, Pa	Pianos, sounding boards for	Oct. 23, 1866.

57,968	Rams, Tillman	Keokuk, Iowa	Ploughs	Sept. 11, 1866.
57,765	Ramsdell, Stephen R	Providence, R. I	Carriage wheels, fenders for	Sept. 4, 1866.
58,886	Ramsey, F., and James Miller	New York, N. Y	Tool for cutting boiler tubes	Oct. 16, 1866.
54,015	Ramsey, George M	do	Jars, fruit, method of constructing	Apr. 17, 1866.
59,153	Ramsted, Carl Henrik	Sweden	Boats from their davits, devices for lowering and detaching	Oct. 23, 1866.
52,202	Rand, A. L	Chicago, Ill	Presses, wind	Jan. 23, 1866.
53,184	Rand, Albert T	New York, N. Y	Gunpowder, mode of preparing vessels for holding	Mar. 13, 1866.
57,187	Rand C. R	Dubuque, Iowa	Furnace, heating	Aug. 14, 1866.
55,783	Randall, Augustus A., assignor to Sargent & Co	New Haven, Conn	Nail and screw heads, coffin, machinery for finishing	June 19, 1866.
53,487	Randall, D. B	West Glover, Vt	Churns	Mar. 27, 1866.
57,377	Randall, Silas G	Providence, R. I	Springs, elastic, manufacture of	Aug. 21, 1866.
53,378	Randle, J. M., assignor to self and J. W. Hill	Brighton, Ill	Horse power	Mar. 20, 1866.
53,043	Randoll, L. J	Chardon, Ohio	Cheese for market, preparing	Mar. 6, 1866.
54,598	Randolph, Theodore F	Cincinnati, Ohio	Sewers	May 8, 1866.
2,324	Rank, Amos	Salem, Ohio	Harvesting machine, wheel of a (Design)	May 22, 1866.
55,905	Same	do	Mowing machines	June 26, 1866.
2,484	Same	do	Wheel (Design)	Oct. 2, 1866.
52,320	Rankin, Andrew	New York, N. Y	Pot, chamber	Jan. 30, 1866.
52,745	Rankin, Andrew	Philadelphia, Pa	Manacles	Feb. 20, 1866.
53,488	Rankin, Andrew	New York, N. Y	Urinals	Mar. 27, 1866.
55,361	Rankin, Andrew	do	Chamber vessel	June 5, 1866.
52,075	Rankin, John	do	Churns	Jan. 16, 1866.
53,335	Same	do	Churns	Mar. 20, 1866.
53,870	Rankin, John C	Mount Vernon, N. Y	Fastener, sash	Apr. 10, 1866.
2,318	Ransom, Samuel H	Albany, N. Y	Stoves, cook's, plates of a (Design)	May 15, 1866.
2,319	Same	do	Stoves, cook's, plates of a (Design)	May 15, 1866.
2,320	Same	do	Stoves, cook's, plates of a (Design)	May 15, 1866.
2,321	Same	do	Stove, parlor, plates of a (Design)	May 15, 1866.
2,322	Same	do	Stove, parlor, plates of a (Design)	May 15, 1866.
	Same. (*See* Gibbs, Samuel W., assignor.)			
	Same. (Design.)			
	Same. (*See* Hailes, William, assignor.)			
55,216	Ransome, Frederick	England	Timber, preserving	May 29, 1866.
55,545	Same	do	Stone cement and plaster, manufacture of	June 12, 1866.
59,070	Ranson, William	Portage, Wis	Medicine	Oct. 23, 1866.
53,762	Raphin, Ambrose	France	Vessels, propeller for	Apr. 3, 1866.
2,241	Rathbone, Lewis	Albany, N. Y	Stove, plates of a (Design)	Jan. 16, 1866.
2,242	Same	do	Stove, parlor, plates of a (Design)	Jan. 16, 1866.
56,266	Rathbun, Rowland J	Poplar Ridge, N. Y	Stoves, cooking attachment to	July 10, 1866.
52,504	Rauh, August	Prussia	Sword and pistol, combined	Feb. 6, 1866.
57,766	Rauschert, F. J	Buffalo, N. Y	Fruit-gatherers	Sept. 4, 1866.
57,186	Raven, Richard	New York, N. Y	Pianos	Aug. 21, 1866.
57,568	Ray, George	Kinderhook, N. Y	Diggers, potato	Mar. 27, 1866.
59,071	Same	do	Planting machines	Oct. 23, 1866.
54,404	Ray, George W	Springfield, Mass	Collars, paper, &c., manufacture of	May 1, 1866.
	Ray, G. W., and V. N. Taylor. (*See* Curtis, Theodore A., ass'r.)			
54,405	Ray, James N	Indianapolis, Ind	Wood, machines for bending	May 1, 1866.
	Ray, S., *et al.* (*See* Shalters & Catern, assignors.)			
2,230	Ray, S., and M. R. Shalters, assignors to John F. Seiberling	Doylestown, Ohio	Harvesting machines (Reissue)	Apr. 17, 1866.
53,871	Ray, Thomas S., and Samuel E. C. Cleveland	Buffalo, N. Y	Lights, head, locomotive	Apr. 10, 1866.
54,599	Raymond, Charles H	Woodstock, Vt	Tin, machinery for folding	May 8, 1866.
55,906	Raymond, F., and A. Miller	Cleveland, Ohio	Gates, fence	June 26 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,264	Raymond, John C	Green Point, N. Y	Sail, wind	Oct. 30, 1866.
2,273	Raymond, Squire	Venice, N. Y	Hay forks, horse (Reissue)	June 5, 1866.
59,072	Raymond, Thomas B	Saginaw, Mich	Rafting pin	Oct. 23, 1866.
57,569	Raynale, Ebenezer	Birmingham, Mich	Boats, canal, propeller for	Aug. 28, 1866.
2,340	Raynor, Samuel	New York, N. Y	Envelope (Design)	June 26, 1866.
53,336	Rad, Dan, and John F. Galley	do	Iron, composition for coating	Mar. 20, 1866.
55,907	Read, Henry	Ypsilanti, Mich	Shade, window	June 26, 1866.
52,746	Read, Henry F	Brooklyn, N. Y	Sifter, flour	Feb. 20, 1866.
52,881	Read, Nelson, and George W. Wyckoff	Syracuse, N. Y	Sewing machine shuttles	Feb. 27, 1866.
54,956	Read, Thomas D. R., and Cyrus Dorrel	Rising Sun, Ind	Presses, hay and cotton	May 22, 1866.
59,652	Reader, John R	New York, N. Y	Cars, railroad	Nov. 13, 1866.
56,799	Recht, Carl	do	Lamps, ventilator and shade for	July 31, 1866.
54,206	Rector, J. H	Syracuse, N. Y	Saw-filing machine	Apr. 24, 1866.
56,467	Redding, W. F	Saratoga Springs, N. Y	Window blinds	July 10, 1866.
52,882	Redfield, Richard	Salem, Ind	Grain, cleaning	Feb. 27, 1866.
52,203	Redlein, John	Brooklyn, N. Y	Mills, cider	Jan. 23, 1866.
53,872	Redmond, Owen	Rochester, N. Y	Harvesters	Apr. 10, 1866.
59,073	Same	do	Ploughs, steam	Oct 23, 1866.
59,319	Redmond, Owen, assignor to Rufus F. Osgood	do	Wells, oil, packing for	Oct. 30, 1866.
	Redstreake, E. S., and Wm. Warner. (*See* Warner & Redstreake.)			
	Reece, T., and F. W. Tully. (*See* Tully & Reece.)			
59,074	Reece, Thomas	Philadelphia, Pa	Boats, portable propeller and steerer for	Oct. 23, 1866.
52,603	Reece, William R	Tremont, Pa	Car wheels, method of attaching and lubricating	Feb. 13, 1866.
	Reece, W. R., and J. M. Roebuck. (*See* Roebuck & Reece.)			
	Reed, Almer. (*See* Slayton & Kane.)			
53,926	Reed, Andrew A., assignor to Elmer Townsend	North Bridgwater, Mass	Eyeletting machines	Apr. 10, 1866.
	Reed, Asa D., *et al.* (*See* Mull, Jonas, assignor.)			
	Reed, Asa D., and Jonas Mull. (*See* Mull & Reed.			
	Reed, A. H., *et al.* (*See* Rehfuss, George, assignor.)			
56,093	Reed, Calvin	Springfield, Ohio	Mowing machines	July 3, 1866.
58,290	Reed, D. K	Orangeville, N. Y	Sheep holders	Sept. 25, 1866.
59,451	Reed, Eden	Joliet, Ill	Postal wrapper	Nov. 6, 1866.
59,653	Reed, Frank	Brattleboro', Vt	Fastenings, door	Nov. 13, 1866.
54,957	Reed, George H	Boston, Mass	Dyes and colors, manufacture of	May 22, 1866.
57,378	Reed, George T	Philadelphia, Pa	Broom and brush head	Aug. 21, 1866.
57,259	Reed, Henry, and William P. Pennewell, assignor to selves and Walter Coldwell.	Middletown, Mo	Planters, corn	Aug. 14, 1866.
	Reed, John, and James Youmans. (*See* Youmans & Reed.)			
57,767	Reed, John H	New Haven, Conn	Car coupling	Sept. 4, 1866.
59,654	Reed, John J	Polo, Ill	Ploughs, sulky	Nov. 13, 1866.
	Reed, J. M., and S. Heflebower. (*See* Heflebower & Reed.)			
52,446	Reed, Kearan	New York, N. Y	Pumps	Feb. 6, 1866.
51,969	Reed, Stephen B	Stuyvesant, N. Y	Rakes, horse	Jan. 9, 1866.
56,448	Reed, Thomas L	Providence, R. I	Gas fixtures, socket coupling for	July 17, 1866.
	Reed, Thomas L., and David K. Hoxsie. (*See* Hoxsie & Reed.)			

52,883	Reed, Timothy K	East Bridgewater, Mass	Boots and shoes, machine for dressing heel faces of	Feb. 27, 1866.
58,178	Same	do	Shoe shanking	Sept. 18, 1866.
60,241	Same	do	Sewing machine	Dec. 4, 1866.
52,368	Reed, Timothy K., assignor to Elmer Townsend	do	Sewing machine	Jan. 30, 1866.
57,047	Same	do	Sewing machine	Aug. 7, 1866.
2,351	Reed, W. H. and Philip	Philadelphia, Pa	Base-ball bat (Design)	July 3, 1866.
55,362	Reeder, Daniel K	Elliottsburg, Pa	Corn sheller	June 5, 1866.
59,137	Reedy, Henry J. and James, assignors to Jane Reedy	Cincinnati, Ohio	Hoisting machines	Oct. 23, 1866.
54,772	Reedy, Jacob	Toledo, Iowa	Fence, portable	May 5, 1866.
56,094	Rees, Charles B., and J. B. Tevis	Philadelphia, Pa	Refrigerators	July 3, 1866.
55,535	Rees, Charles F	Millersville, Pa	Lamps, lard	June 12, 1866.
54,823	Rees, Jacob P., and R. A. Graham, assignors to selves and C. C. Burns.	Greensburg, Ind	Ditching machine	May 15, 1866.
54,406	Reese, Adam R	Phillipsburg, N. J	Harvester rakes	May 1, 1866.
55,709	Reese, Charles	Baltimore, Md	Fruit boxes	June 19, 1866.
56,095	Reese, David	Newburg, Ohio	Nuts, machinery for tapping	July 3, 1866.
55,710	Reese, Jacob	Pittsburg, Pa	Metallic oxides, reducing	June 19, 1866.
57,969	Same	do	Metallic oxides, reducing, and in refining the metal resulting therefrom.	Sept. 11, 1866.
	Reese, Lake, Melick & Co. (*See* Paiste, David R., assignor.)			
54,407	Reese, Lowis	Rolling Prairie, Ind	Windmills	May 1, 1866.
2,259	Reese, Lowis C	Phillipsburg, N. J	Harvesters	May 29, 1866.
	Reeve, Selah, (*See* Ferguson, Henry J., assignor.)			
53,873	Reeves, David	South Pass, Ill	Evaporator. (Antedated April 7, 1866)	Apr. 10, 1866.
56,449	Reeves, Orrin	Greenport, N. Y	Clothes wringers	July 17, 1866.
51,864	Reffelt, J. H. R	Hoboken, N. J	Alphabeticon	Jan. 2, 1866.
53,337	Regester, Joshua	Baltimore, Md	Steam generators, try-cocks for	Mar. 20, 1866.
55,711	Same	do	Hydrants	June 19, 1866.
55,712	Same	do	Hydrants	June 19, 1866.
57,570	Same	do	Water-closets, valves for	Aug. 28, 1866.
52,884	Rehfuss, George	Philadelphia, Pa	Buttons to fabrics, apparatus for securing. (Antedated February 16, 1866.)	Feb. 27, 1866.
52,885	Same	do	Buttons to fabrics, apparatus for securing. (Antedated Feb. 16, '66)	Feb. 27, 1866.
52,932	Rehfuss, George, assignor to self, C. S. Patterson, E. Pincus, A. Hart, M. Moore, A. Mitchell, and A. H. Reed.	do	Sewing machine, feed-adjusting device for	Feb. 27, 1866.
58,291	Rehorn, Frederick	New York, N. Y	Iron, sad, handle	Sept. 25, 1866.
53,677	Reich, Ludvig	do	Brewing and distilling, cooler for	Apr. 3, 1866.
52,076	Reichenback, Frederick	Rochester, N. Y	Supporters, uterine	Jan. 16, 1866.
	Reichert, John, and George Miller. (*See* Miller & Reichert.)			
57,970	Reid, John	Knoxville, Md	Compass scales, mariners'	Sept. 11, 1866.
58,136	Reid, J. Wyatt	New York, N. Y	Car brakes	Sept. 18, 1866.
60,242	Reid, Lawrence, and Edward H. Swift, deceased, by David Lyman, administrator, assignors to P. L. Robinson and J. H. Parsons.	do / Middlefield, Conn	Cane juice, mode of defecating. (Antedated November 29, 1866)	Dec. 4, 1866.
60,243	Same	do	Cane juice, mode of defecating. (Antedated November 29, 1866)	Dec. 4, 1866.
60,244	Same	do	Cane juice, method of defecating. (Antedated November 29, 1866)	Dec. 4, 1866.
60,245	Same	do	Cane juice, method of defecating. (Antedated November 29, 1866)	Dec. 4, 1866.
60,246	Same	do	Cane j ice, method of defecating. (Antedated November 29, 1866)	Dec. 4, 1866.
55,363	Reid, William	West Arlington, Vt	Barrel, tight, machine for compressing the cylinders of casks upon their heads to form a.	June 5, 1866.
59,452	Reiff, Jacob G	Farmersville, Pa	Sulkies	Nov. 6, 1866.
	Reifsnider, P., and M. J. Althouse. (*See* Althouse & Reifsnider.)			
58,887	Reilley, John O	Baltimore, Md	Spikes, machine for making	Oct. 16, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,678	Reimann, Henry	Brooklyn, N. Y	Cigar fuze, boxes for	Apr. 3, 1866.
53,338	Reinaur, Leopold	Cincinnati, Ohio	Gilding, machine for preparing oval frames for	Mar. 20, 1866.
	Reinbold, William H., and Daniel K. Wertman. (*See* Wertman & Reinbold.)			
58,476	Reiner, Jacob K	Lexington, Pa	Cultivators	Oct. 2, 1866.
60,058	Reiner, Joel K	Line Lexington, Pa	Churns	Nov. 27, 1866.
54,476	Reiniger, G. Albert	Wurtemberg	Cigars, machine for making fillers for	May 1, 1866.
55,217	Same	do	Cigar machine	May 29, 1866.
55,971	Reinlein, William	Spain	Air engines, hot	June 26, 1866.
59,075	Reising, Joseph	Aurora, Ill	Counter supporter	Oct. 23, 1866.
58,888	Remington, A. O., and V. R. Stewart	Weedsport, N. Y	Water elevators	Oct. 16, 1866.
	Remington, C. K. (*See* Oliver, W. S., assignor.)			
	Remington, E., & Sons. (*See* Rider, Joseph, assignor.)			
	Same. (*See* Mason, William, assignor.)			
54,257	Remington, George W., assignor to self and George H. Remington	North Providence, R. I	Watch keys	Apr. 24, 1866.
54,408	Remington, Helen M	Springfield, Mass	Shirts, paper	May 1, 1866.
54,773	Same	do	Undersleeves, paper, ladies'	May 15, 1866.
56,328	Remington, Martin C., assignor to self and A. O. Remington	Auburn, N. Y	Grain forks	July 10, 1866.
60,059	Renseh, Henry	Quincy, Ill	Beer, apparatus for cooling	Nov. 27, 1866.
60,641	Renz, Mitchell	Naugatuck, Conn	Hoe, weeding, extension	Dec. 18, 1866.
58,477	Resor, William	Cincinnati, Ohio	Stoves, heating	Oct. 2, 1866.
2,516	Same	do	Stove (Design)	Dec. 4, 1866.
2,517	Same	do	Stove (Design)	Dec. 4, 1866.
2,518	Same	do	Stove (Design)	Dec. 4, 1866.
2,519	Same	do	Stove, cooks' (Design)	Dec. 4, 1866.
2,520	Same	do	Stove, cooks' (Design)	Dec. 4, 1866.
	Resor, William, & Co. (*See* Truesdale, Charles, assignor.)			
	Same.			
54,016	Reutlinger, Philipp, and Albin Herbert	Williamsburg, N. Y	Liquid cooler	Apr. 17, 1866.
53,185	Rewerick, Assaria	San Francisco, Cal	Pumps	Mar. 13, 1866.
59,453	Rex, W. A	Newville, Ind	Punch	Nov. 6, 1866.
56,611	Reynold, Frederick	Newark, N. J	Nails, harness, mode of manufacturing	July 24, 1866.
55,536	Reynold, F., and F. L. Hilbright	do	Nails, harness, dies for forming metal heads on	June 12, 1866.
57,655	Reynolds, Asa B	Auburn, N. Y	Harvesters, &c., method of tempering knife sections for	Aug. 28, 1866.
59,780	Reynolds, Edwin	Boston, Mass	Steam generators	Nov. 20, 1866.
58,674	Reynolds, George A	Rochester, N. Y	Jar, fruit	Oct. 9, 1866.
54,409	Reynolds, George E	Philadelphia, Pa	Furnaces	May 1, 1866.
58,478	Reynolds, George H	New York, N. Y	Engines, steam	Oct. 2, 1866.
59,862	Reynolds, George H	Peoria, Ill	Bran dusters	Nov. 20, 1866.
2,381	Reynolds, George H., and M. A. Hinckley, administratrix of D. B. Hinckley, deceased, assignees of George H. Reynolds.	Mystic Bridge, Conn	Valves, cut-off, method of operating	Oct. 16, 1866.
53,339	Reynolds, George L	Newburg, N. Y	Fastenings for blinds and windows	Mar. 20, 1866.
58,026	Reynolds, George S., assignor to self and Francis A. Cushman	Tunbridge, Vt	Reaping and mowing machines	Sept. 11, 1866.
54,207	Reynolds, Harvey A	New York, N. Y	Velocipedes	Apr. 24, 1866.
52,322	Reynolds, Harvey	do	Chimney cap	Jan. 30, 1866.

2,234	Reynolds, Henry	Springfield, Mass	Cartridge extractor for fire-arms (Reissue)	May 1, 1866.
54,600	Same	New Haven, Conn	Fire-arms, breech-loading	May 8, 1866.
	Same. (*See* Warner, Amaziah S., assignor.)			
52,604	Reynolds, Jesse	Philadelphia, Pa	Stove and furnace doors, dust screen for	Feb. 13, 1866.
53,340	Reynolds, John	San Francisco, Cal	Bullion, process for refining	Mar. 20, 1866.
2,529	Reynolds, John	Washington, D. C	Buggy	Dec. 11, 1866.
	Reynolds, J. B., *et al.* (*See* Taggart, J., assignor.) Reissue.			
	Same. (*See* Merriman & Ross, assignors.)			
57,571	Reynolds, N. B	Auburn, N. Y	Tools, &c., machinery for grinding	Aug. 28, 1866.
	Reynolds, Rensselaer	Stockport, N. Y	Looms, power (Extension)	May 24, 1866.
	Reynolds, Richard W. (*See* Goodman, Joseph, assignor.)			
52,605	Reynolds, Samuel	Pittsburg, Pa	Stove, oven for annealing	Feb. 13, 1866.
58,137	Reynolds, Samuel G	Providence, R. I	Nails, machinery for making	Sept. 11, 1866.
54,410	Reynolds, Uel	New York, N. Y	Carriages	May 1, 1866.
54,958	Same	do	Vehicles, fifth wheel for	May 22, 1866.
57,379	Same	do	Carriages, pole, iron socket for	Aug. 21, 1866.
58,292	Same	do	Carriages, body, tops for	Sept. 25, 1866.
53,489	Rhines, Foster	Watertown, N. Y	Mop wringers	Mar. 27, 1866.
	Rhinesmith, John, and John H. Clark. (*See* Clark & Rhinesmith.)			
	Design.			
58,479	Rhoades, Samuel H	Clyde, Ohio	Pumps, driving	Oct. 2, 1866.
	Rhoades, William, and William Thomas. (*See* Thomas & Rhoades.)			
56,268	Rhodes, John C	East Bridgewater, Mass	Tacks, machinery for capping	July 10, 1866.
2,157	Rhodes, Richard S., and Ebenezer Whyte	Chicago, Ill	Preserving eggs, process for	Jan. 23, 1866.
58,293	Rhodes, William, and Greenville Hazlewood	Bloomfield, Iowa	Saddletree, ladies'	Sept. 25, 1866.
	Ribon, J. J., and J. M. Munoz. (*See* Marques, Lorenzo, assignor.)			
54,774	Rice, Albert L	Worcester, Mass	Saws, circular, to their arbors, mode of attaching	May 15, 1866.
	Rice, D. L. and W. M. (*See* Ford, John C., assignor.)			
	Rice, Edwin T. (*See* Fuller, Jim B., assignor.)			
	Rice, Eliakim, and J. Warren Brown. (*See* Brown & Rice.)			
52,606	Rice, Harrison	Springfield, Ohio	Cultivators	Feb. 13, 1866.
59,926	Rice, Ignatius	New York, N. Y	Combs	Nov. 20, 1866.
	Same. (*See* Hicks, Joseph H., assignor.)			
	Same. (*See* Knight, Edward H., assignor.)			
54,208	Rice, I. E	Boston, Mass	Picture frames	Apr. 24, 1866.
	Rice, Quartus (*See* Croll, J. S., assignor.)			
59,748	Rice, Samuel G	Albany, N. Y	Tobacco press and cutter	Nov. 20, 1866.
58,675	Rice, W. M	Boston, Mass	Heel irons	Oct. 9, 1866.
	Rich, George W., *et al.* (*See* Irving, McNeil, Rich & Fay.)			
60,422	Rich, J. C., deceased, by Barbery O. Rich, administratrix	Penfield, N. Y	Cultivator	Dec. 11, 1866.
53,680	Rich, John T	Philadelphia, Pa	Valve gear, cut-off	Apr. 3, 1866.
55,908	Rich, W. E	New Providence, Iowa	Planters, corn	June 26, 1866.
52,607	Richards, Celius E	North Attleborough, Mass	Collars, paper	Apr. 13, 1866.
52,608	Same	Attleborough, Mass	Buttons	Apr. 13, 1866.
54,411	Same	North Attleborough, Mass	Chain, elastic	May 1, 1866.
	Richards, Charles L., and Thomas C. Smith. (*See* Parmelee, Dubois D., assignor.)			
52,609	Richards, Frank H	Lansingburg, N. Y	Valves, slide, balanced	Feb. 13, 1866.
56,800	Richards, Henry C	Cincinnati, Ohio	Stairs and rooms, protector for corners of	July 31, 1866.
53,234	Richards, Jesse F., assignor to the American Eyelet Company	Attleborough, Mass	Eyelets	Mar. 13, 1866.
60,556	Richards, John	Washington, D. C	Poker, tongs, wrench, &c., combined	Dec. 18, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,655	Richards, L., and D. Lincoln	Orangeville, N. Y.	Fruit picker	Nov. 13, 1866.
55,159	Richards, Samuel	Philadelphia, Pa	Glass, process for manufacturing	May 29, 1866.
54,959	Richards, Thomas	Lansingburg, N. Y.	Engines, steam, balanced valves for. (Antedated May 7, 1866)	May 22, 1866.
53,341	Richards, Thomas C	New York, N. Y.	Pulley, self-stopping	Mar. 20, 1866.
	Richards, W. D., *et al.* (*See* Baldwin, C. W., assignor.)			
60,247	Richardson, Charles	Richmond, Va.	Game of battle, war chess	Dec. 4, 1866.
	Richardson, Charles A., and Theodore A. Williamson. (*See* Williamson & Richardson.)			
59,265	Richardson, E. P	Lawrence, Mass	Sewing machines	Oct. 30, 1866.
59,076	Richardson, Francis A	Poultney, Vt	Latch-stop, mortise	Oct. 23, 1866.
53,874	Richardson, George	Lowell, Mass.	Spinning, flyers for	Apr. 10, 1866.
58,555	Richardson, George M., assignor to self and N. L. Johnson	Barre, Mass	Bonnets, machines for pressing	Oct. 2, 1866.
58,294	Richardson, George W	Troy, N. Y.	Valves, safety, steam	Sept. 25, 1866.
55,909	Richardson, H. Stone, assignor to self and E. P. Russell	Manlius, N. Y	Lighting and extinguishing gas, automatic machinery	June 26, 1866.
52,323	Richardson, Ithiel S	Boston, Mass	File clasp for documents, &c. (Antedated January 19, 1866)	Jan. 30, 1866.
53,747	Richardson, John, assignor to self and Edwin Fernald	Turner, Maine	Tools, edge, machine for holding and grinding	Apr. 3. 1866.
52,077	Richardson J. F., and George F. Morse	Portland, Maine	Heel calk	Jan. 16, 1866.
54,960	Richardson, John W., Daniel L. Davis, and William C Howell	Sligo, Ohio	Mills, cane	May 22, 1866.
55,160	Richardson, Margaret	Norristown, Pa	Medical compound	May 29, 1866.
	Richardson, M. S., and E. A. Pond. (*See* Pond & Richardson.)			
	Same.			
	Same.			
	Richardson, Robert E. (*See* Tiffany, D. B., assignor.)			
52,204	Richardson, S. D., and T. S. Hughes	Syracuse, N. Y.	Pump filters	Jan. 23, 1866.
2,283	Richardson, Samuel M	New York, N. Y	Hinge plate (Design)	Mar. 13, 1866.
53,679	Richardson, William A., and Henry D. Ward	Worcester, Mass.	Lamp extinguishers	Apr. 3, 1866.
57,768	Same	do	Lamp extinguishers	Sept. 4, 1866.
53,748	Richer, Leon T., assignor to self and Isaac L. Allen	New York, N. Y.	Can, water, for railroad cars	Apr. 3, 1866.
55,364	Richey, Cromwell O	Aurora, Ind	Bits, braces for. (Antedated May 16, 1866)	June 5, 1866.
	Richman, J. Scott. (*See* Boon, Alonzo T., assignor.)			
57,769	Richmond, Charles	Worcester, Mass.	Tool	Sept. 4, 1866.
58,480	Richmond, Edward, assignor to self and John F. Orcutt	Brooklyn, N. Y.	Whip rack	Oct. 2, 1866.
52,886	Richmond, James	Lockport, N. Y.	Brau dusters	Feb. 27, 1866.
58,295	Rickel, Josiah S	Geneseo, Ill	Planters, corn	Sept. 25, 1866.
59,077	Rickel, Matthias S. and J. S	do	Drills, wheat	Oct. 23, 1866.
52,205	Rickey, David T	Marshalltown, Iowa	Grape trellis	Jan. 23, 1866.
	Riddell, John, and Boyd Allen. (*See* Allen & Riddell.)			
59,266	Riddell, John, and Boyd Allen	Boston, Mass	Grater, nutmeg. (Antedated October 18, 1866)	Oct. 30, 1866.
	Riddell, D. W., *et al.* (*See* Stratton, James, assignor.)			
52,206	Rider, Alexander K	Hydeville, Vt.	Steam blowers	Jan. 23, 1866.
	Rider, Benjamin P., and George W. Sargent. (*See* Sargent & Rider.)			
	Rider, John	New York, N. Y.	Gutta percha, process of manufacturing (Extension)	May 31, 1866.
53,543	Rider, Joseph, assignor to self and E. Remington & Sons	Newark, Ohio	Fire-arms, breech-loading	Mar. 27, 1866.
59,267	Rider, L. P	Munson, Ohio	Ploughs, mouldboards for	Oct. 30, 1866.

	Ridgeway, Samuel C., and John Fox. (*See* Taylor, Thomas, assignor.)			
	Same. (*See* Fox & Ridgeway.)			
56,269	Ridings, George T	Shelbyville, Ohio	Tire machines	July 10, 1866.
56,270	Same	....do	Tire heater, rotary	July 10, 1866.
56,096	Riedel, G. A	Philadelphia, Pa	Boiler feeders, automatic	July 3, 1866.
58,481	Riedel, Karl	Guttenberg, N. J	Lamps	Oct. 2, 1866.
58,482	Riehl, Michael	Philadelphia, Pa	Paper cutter, bookbinders'	Oct. 2, 1866.
	Ries, Constantine. (*See* Kroeger, Werner, assignor.)			
	Riggs, Charles G. (*See* Markham, Homer C., assignor.)			
55,097	Riggs, J. F	St. Joseph, Mo	Evaporator	July 3, 1866.
	Riley, John D., and Henry Climer. (*See* Climer & Riley.)			
57,971	Riley, John M	Newark, N. J	Casters. (Antedated September 2, 1866.)	Sept. 11, 1866.
60,423	Riley, J. P	Phi adelphia, Pa	Hydrants	Dec. 11, 1866.
59,656	Riley, Philip	New Bedford, Mass	Shoe tips, method of securing	Nov. 13, 1866.
55,713	Rinehart, William D	Pittsburg, Pa	Casting pulleys, moulds for	June 19, 1866.
	Rinehart, W. D., and A. J. Rogers. (*See* Rogers & Rinehart.)			
54,775	Rippon, William F	Providence, R. I	Axle box	May 15, 1866.
53,490	Risley, William H	Berlin, Conn	Cartridges, metallic, for loose ammunition	Mar. 27, 1866.
57,770	Rison, E. R	Kinmundy, Ill	Bed bottom	Sept. 4, 1866.
53,875	Ritchie, Edward S	Brookline, Mass	Compass, mariners'	Apr. 10, 1866.
	Riter, J. L., *et al.* (*See* Swann, R. C., assignor.)			
58,676	Riter, J. M., and L. J. Farquhar	Pittsburg, Pa	Metal, machines for punching sheets of	Oct. 9, 1866.
55,365	Ritson, Edwin, and William W. Brigg	Mattaville, N. Y	Hoes	June 5, 1866.
59,781	Rittenhouse, James T	Urbana, Ill	Churn dashers	Nov. 20, 1866.
	Ritter, Israel S. (*See* Harris, John O., assignor.)			
	Same.			
52,747	Ritterhoff, F. W	New York, N. Y	Tobacco cutting machine	Feb. 20, 1866.
52,447	Rix, Alfred	San Francisco, Cal	Forging apparatus	Feb. 6, 1866.
58,296	Same	....do	Candlesticks	Sept. 25, 1866.
57,771	Roach, Benjamin	Melrose, Mass	Shaft coupling	Sept. 4, 1866.
55,784	Roach, Francis, assignor to self and Joseph Zane	Boston, Mass	Cocks, stop	June 19, 1866.
	Roach, John, and Joseph C. Coult. (*See* Coult & Roach.)			
	Same.			
	Roads, F., and Fairbanks, J. N. (*See* Fairbanks & Roads.)			
59,078	Robarts, J. L	Brunswick, Ga	Ploughs	Oct. 23, 1866.
56,271	Robbins, Addison	Orange, Mass	Railway frog	July 10, 1866.
52,610	Robbins, Chandler	Chicago, Ill	Pianos	Feb. 13, 1866.
2,297	Robbins, E. Y	Cincinnati, Ohio	Warming and ventilating buildings, method of. (Reissue)	Jan. 23, 1866.
54,561	Robbins, Hiram, assignor to self and Thomas H. Foulds	....do	Wringers, rollers for	May 8, 1866.
56,865	Same	....do	Clothes wringer	July 31, 1866.
58,027	Same	....do	Wringers, roller for	Sept. 11, 1866.
54,017	Robbins, John I	....do	Tobacco cutting machines	Apr. 17, 1866.
60,248	Robbins, Louis S	New York, N. Y	Fuel, method of preparing peat and other substances for	Dec. 4, 1866.
56,991	Robbins, Martin	Cincinnati, Ohio	Pitcher, molasses	Aug. 7, 1866.
55,537	Robbins, Nathaniel, jr	Rockport, Mass	Car coupling	June 12, 1866.
2,342	Robbins, R. C., deceased; H. L. Case, administrator of R. C. Robbins, deceased; H. L. Case, I. M. Keen, and J. W. Mason, assignees of said Robbins.	Jersey City, N. J	Pipe, gas, joints. (Reissue)	Aug. 28, 1866.
57,380	Robbins, Thomas C., assignor through mesne assignments to R. Edgar Hastings.	Philadelphia, Pa	Gold-beating apparatus	Aug. 21, 1866.
	Robbins, Wells L. (*See* Holmes, A. J., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
57,772	Robbins, William H	Richmond, Ind	Hog troughs	Sept. 4, 1866.
59,330	Roberts, Julius	Austria	Extracts, process for making	Oct 30, 1866.
54,209	Roberts, Benjamin	Highland, N. Y	Press, hay	Apr. 24, 1866.
52,887	Roberts, Benjamin S	United States army	Fire-arms, breech-loading	Feb. 27, 1866.
55,161	Roberts, Charles	Lake Village, N. H	Washing machine	June 26, 1866.
57,773	Roberts, C. D	Jacksonville, Ill	Rollers, ground	Sept. 4, 1866.
60,249	Roberts, C. R., and J. S. Hartzell	Addison, Pa	Fruit gatherers	Dec. 4, 1866.
59,454	Roberts, C. S	Lyons, Iowa	Cultivators	Nov. 6, 1866.
	Roberts, D. J., *et al.* (*See* Curtis, Roberts & Curtis.)			
59,936	Roberts, Edward A. L	New York, N. Y	Wells, oil, method of increasing capacity of. (Antedated May 20, 1866.)	Nov. 20, 1866.
56,612	Roberts, John W	New Monmouth, N. J	Buttons to garments, securing	July 24, 1866.
53,749	Roberts, Milton, assignor to self and Nathan H. Roberts	St. Paul, Minn	Plough, attachment in	Apr. 3, 1866.
56,678	Roberts, Milton, assignor to self and John A. Lloyd	... do	Bed-bottom spring	July 24, 1866.
57,381	Roberts, Norman C., and Ezra W. Badger	Burlington, Otsego, N. Y	Vine, hop, supports	Aug. 21, 1866.
2,373	Roberts, R. J	New York, N. Y	Trade marks (Design)	July 24, 1866.
52,207	Roberts, Thomas L	Indianapolis, Ind	Mills, for grinding sugar cane	Jan. 23, 1866.
2,363	Roberts, William W	Hartford, Conn	Casket, burial (Design)	July 17, 1866.
	Robertson, Dow & Company. (*See* Pixley & Robertson, assignors.)			
52,208	Robertson, James	East Boston, Mass	Presses, wine	Jan. 23, 1866.
54,413	Robertson, John	New York, N. Y	Hammers, atmospheric	May 1, 1866.
	Robertson, John, and Agur Pixley. (*See* Pixley & Robertson.)			
59,927	Robertson, N. L	Rockford, Ill	Sifter	Nov. 20, 1866.
	Robertson, R. A., *et al.* (*See* Prentiss, E. F., *et al.*, &c.) Reissue. Same.			
	Robertson, R. A., and E. F. Prentiss. (*See* Prentiss & Robertson.) Reissue. Same.			
53,187	Robertson, William H., and George W. Simpson	Hartford, Conn	Fire-arms, breech-loading	Mar. 13, 1866.
51,865	Robie, Jacob C	Binghamton, N. Y	Rubber, hard, apparatus for filling moulds for	Jan. 2, 1866.
	Same. (*See* Overhiser, George C., assignor.)			
54,776	Robinson, Alexander M., assignor to self and Howard Tilden	Boston, Mass	Egg beater	May 15, 1866.
	Robinson, A., T. *et al.* (*See* Sigourney, Robinson & Shepard.)			
56,992	Robinson, C., and J. C. Marshall	Springfield, Mass	Boot heel	Aug. 7, 1866.
55,366	Robinson, D. D	Niles, Mich	Rivet or bolt cutters	June 5, 1866.
53,342	Robinson, Daniel T	Boston, Mass	Bottle-stopper fastener	Mar. 20, 1866.
54,210	Same	....do	Tobacco, machine for cutting	Apr. 24, 1866.
59,657	Same	....do	Nails, tool for drawing	Nov. 13, 1866.
60,060	Same	....do	Presses, fruit	Nov. 27, 1866.
60,250	Same	....do	Car, railway, horse, pole for	Dec. 4, 1866.
53,544	Robinson, Daniel T., assignor to self and Lorin L. Fuller	....do	Car brake. (Antedated March 21, 1866.)	Mar. 27, 1866.
51,901	Robinson, Daniel T., assignor to self and Howard Tilden	....do	Sifter, flour	Jan. 2, 1866.
60,424	Robinson, Daniel T., assignor to self and Nathaniel Jenkins	....do	Bottle stoppers	Dec. 11, 1866
60,557	Robinson, Darius S	Oswego, N. Y	Paint, &c., compound oil for	Dec. 11, 1866.

	Robinson, David, jr. (*See* Butterfield, George, assignor.)			
53,343	Robinson, Edward	New York, N. Y.	Water closets, portable	Mar. 20, 1866.
57,260	Robinson, E. A., assignor to the United States Button Company	Waterbury, Conn	Buttons	Aug. 14, 1866.
58,138	Robinson, E. B	Portland, Maine	Irons, flat	Sept. 18, 1866.
58,297	Robinson, E. J	Canton, Ohio	Saws	Sept. 25, 1866.
58,298	Robinson, E. S	New York, N. Y.	Car wheels	Sept. 25, 1866.
53,876	Robinson, Frank J	Laconia, N. H.	Churns	Apr. 10, 1866.
56,098	Robinson, George M	New Wilmington, Pa	Tuyeres, water-box for	July 3, 1866.
55,716	Robinson, John	Calais, Vt	Butter-workers	June 19, 1866.
55,218	Robinson, John, and James Gresham	Great Britain	Injector, feed-water	May 29, 1866.
52,448	Robinson, John K., and David A. Strong	Washington, D. C	Wells, deep, packings for	Feb. 6, 1866.
53,877	Robinson, Jonathan S	Baltimore, Md	Safe and table, provision	Apr. 10, 1866.
53,344	Robinson, Marens M.	Dangola, Ill	Steam generators, gauge-cocks for	Mar. 20, 1866.
53,186	Robinson, O. H. P	Bellport, N. Y.	Axle-boxes	Mar. 13, 1866.
	Robinson, P. L., and J. H. Parsons. (*See* Reid & Swift, assignors.)			
	Same.			
	Same.			
	Same.			
	Same.			
	Robinson, S., and G. F. Chambers. (*See* Chambers & Robinson.)			
59,658	Robinson, S. W	Detroit, Mich	Timepieces, escapements for	Nov. 13, 1866.
52,078	Robinson, Thomas C	Boston, Mass	Engine, steam	Jan. 16, 1866.
60,251	Robinson, T. R., and R. E. Jones	Providence, R. I.	Lubricator	Dec. 4, 1866.
60,252	Robinson, W. B	Detroit, Mich	Valves, slide	Dec. 4, 1866.
51,866	Robinson, William W	Ripon, Wis	Bed bottom	Jan. 2, 1866.
56,099	Same	do	Cutlery	July 3, 1866.
54,601	Robinson, H. A	Cleveland, Ohio	Hat blocks	May 8, 1866.
54,017	Robitaille, Charles, assignor to Florian Dahis and Henry B. Voss	Brooklyn, N. Y.	Buttons	Apr. 17, 1866.
54,602	Robjohn, Thomas	New York, N. Y.	Sewing machine, braid-guide	May 8, 1866.
54,603	Robjohn, William	do	Organs	May 8, 1866.
53,878	Roby, L. M	Leesville, Ohio	Hay forks, horse	Apr. 10, 1866.
	Roche, D. W. (*See* Lawler, P. H., assignor.)			
56,100	Roche, Philip	Binghamton, N. Y.	Saw gummer	July 3, 1866.
55,162	Roche, Thomas B	Folsom, Cal.	Swivel shackle	May 29, 1866.
52,748	Roche, Thomas C	Williamsburg, N. Y.	Developing stick	Feb. 20, 1866.
57,972	Roekey, Thomas J	McElhattan, Pa	Wagon brakes, self-acting	Sept. 11, 1866.
54,018	Rockwell, Adeline A	New York, N. Y.	Wearing apparel, trimming for	Apr. 17, 1866.
60,253	Rockwell, A. H	Harpersville, N. Y.	Harness, safety-line for	Dec. 4, 1866.
60,254	Same	do	Bridles	Dec. 4, 1866.
58,734	Rockwell, Joseph G., assignor to Calvin Eaton	Cortland, N. Y.	Ladder	Oct. 9, 1866.
53,681	Rockwell, S. S	Lansing, Mich.	Bag-holders	Apr. 3, 1866.
54,777	Rodebough, George W	Toledo, Ohio	Saw mills, head-blocks for	May 15, 1866.
53,879	Rodgers, T. H	Chicago, Ill	Brick machine	Apr. 10, 1866.
57,188	Rodier, Louis C	Springfield, Mass	Pumps, steam	Aug. 14, 1866.
55,961	Rodier, Louis C., assignor to self and Henry Hammond	do	Mop heads. (Antedated December 26, 1865)	June 26, 1866.
59,659	Rodier, Peter	do	Sewing machines, loop-check for. (Antedated Nov. 5, 1866)	Nov. 13, 1866.
56,101	Roebuck, J. M., and W. R. Reese	Donaldson, Pa	Pumps	July 3, 1866.
55,538	Roehrig, Augustus	Williamsburg, N. Y.	Window sash, hanging	June 12, 1866.
56,801	Roemer, Williams	Newark, N. Y.	Bags, travelling	July 31, 1866.
	Rogers & Brother *et al.* (*See* White, Le Roy S., assignor.)			
54,605	Rogers, Ambler J	Kittanning, Pa	Spikes, machine for rolling	May 8, 1866.
58,483	Rogers, A. J., and W. D. Rinehart	Pittsburg, Pa	Spikes, machines for making	Oct. 2, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,778	Rogers, Artemas	Painesville, Ohio	Ladders, fruit, extension	May 15, 1866.
55,163	Rogers, Benjamin C	Stockbridge, Vt	Vines, hop, training	May 29, 1866.
59,660	Rogers, Charles	Bergen, N. J	Hitching horses, device for	Nov. 13, 1866.
52,369	Rogers, Edward F., assignor to self and Alfred K. Hills	Boston, Mass	Lamps	Jan. 30, 1866.
53,880	Rogers, Francis M	Cincinnati, Ohio	Fireplace	Apr. 10, 1866.
60,425	Rogers, Frederick O	Niles, Mich	Buildings, mode of constructing	Dec. 11, 1866.
	Rogers, F. S., *et al.* (*See* Barton, Rogers & Fisher.)			
57,382	Rogers, George W	New York, N. Y	Bottle stopper	Aug. 21, 1866.
54,019	Rogers, Henry	Eureka, Cal	Shingle machine	Apr. 17, 1866.
	Rogers, James E. (*See* Dunne, John A. H., assignor.)			
2,251	Rogers, John	New York, N. Y	Group of figures (Design)	Jan. 30, 1866.
2,352	Same	do	Group of figures (Design)	July 3, 1866.
2,521	Same	do	Group of figures (Design)	Dec. 4, 1866.
55,539	Rogers, Robert E., and James Black	Philadelphia, Pa	Steam generators	June 12, 1866.
60,558	Rogers, Samuel F	Malden, Mass	Petroleum and heavy oils, dryer for. (Antedated Dec. 12, 1866)	Dec. 18, 1866.
51,970	Rogers, Seymour	Pittsburg, Pa	Belt stretcher	Jan. 9, 1866.
52,079	Same	do	Hoe	Jan. 16, 1866.
53,345	Same	do	Hay forks, horse	Mar. 20, 1866.
2,260	Same	do	Hay forks, horse (Reissue)	June 26, 1866.
59,139	Rogers, Seymour, assignor to Luman Rogers	do	Hag forks, horse	Oct. 23, 1866.
59,661	Rogers, Stephen G. and George S	Thetford, Vt	Paper-making machinery	Nov. 13, 1866.
53,243	Rogers, Thomas	England	Sewing machines, binder-guides for	Mar. 3, 1866.
60,559	Rogers, William B	Chicago, Ill	Fluid, burning	Dec. 18, 1866.
	Rogers, W. F., and D. C. Guttridge. (*See* Guttridge & Rogers.)			
56,615	Rogers, William T	Quincy, Ill	Ploughs, gang	July 24, 1866.
60,061	Rohms, A., and P. Guetlich	Lancaster, N. Y	Reels or swifts	Nov. 27, 1866.
	Rohrer, Martin, and S. P. Metz. (*See* Metz & Rohrer.)			
57,973	Roland, G. A	Wasioja, Minn	Wind wheel	Sept. 11, 1866.
53,244	Rolland, Gustave E. and Emile L	France	Composition for cleaning and scouring textile fabrics	Mar. 13, 1866.
2,330	Rollins, J. A., assignor to G. A. Prince, C. E. Bacon, and C. F. S. Thomas.	Buffalo, N. Y	Melodeons (Reissue)	Aug. 7, 1866.
53,346	Romans, John	Collamer, Pa	Rack, sheep	Mar. 20, 1866.
	Romminger, J. T. (*See* Möller, Peter C., assignor.)			
58,139	Rood, D. P	Warsaw, N. Y	Surcingle	Sept. 18, 1866.
59,455	Rood, E. O., and S. H. Hackett	Lodi, Ill	Thill coupling	Nov. 6, 1866.
	Roop, Jacob, and Stephen Hughes. (*See* Hughes & Roop.)			
58,352	Roos, George, and Michael White, assignors to selves and Charles W. Daniels.	Buffalo, N. Y	Padhooks	Sept. 25, 1866.
55,164	Roosevelt, Albert J	Pelham, N. Y	Roots, succulent, for food, machine for cutting	May 29, 1866.
60,642	Root, Eleazer	Indianapolis, Ind	Terraspheres	Dec. 18, 1866.
58,958	Root, E. K., deceased, by Matilda C. Root Harris and Elisha Colt, executors.	Hartford, Conn	Baskets, machines for dressing willow for	Oct. 16, 1866.
56,993	Root, John B	New York, N. Y	Engines, trunk	Aug. 7, 1866.
57,189	Same	do	Piston-packing rings	Aug. 14, 1866.
57,190	Same	do	Engines, trunk	Aug. 14, 1866.

58,299	Same	....do	Wells, oil, boring and pumping apparatus for	Sept. 25, 1866.
2,369	Roots, P. H	Connersville, Ind	Blowers (Reissue)	Oct. 2, 1866.
58,745	Same	....do	Blowers, rotary	Oct. 9, 1866.
56,614	Roots, P. H. and F. M	....do	Blowers, cross-heads for	July 24, 1866.
53,881	Roper, Sylvester H	Roxbury, Mass	Fire-arms, revolving	Apr. 10, 1866.
55,428	Roper, S. H., assignor to Elmer Townsend	....do	Air engines, hot	June 5, 1866.
	Ropes, D. N. (*See* Schramm, G. W., assignor.)			
	Ropes, David N. (*See* Halsey, William H., assignor.)			
	Same.			
	Same. (*See* Halsey & Fitzgibbons, assignors.)			
	Same.			
57,774	Rose, C. A	Columbus, Ga	Fire, material for kindling	Sept. 4, 1866.
53,188	Rose, H. S	Bath, N. Y	Bedstead, sofa	Mar 13, 1866.
52,749	Rose, Israel M	New York, N. Y	Cloth, &c., guides for folding and uniting the edges of two pieces of.	Feb. 20, 1866.
53,189	Same	....do	Drilling and driving machine. (Antedated February 16, 1866)	Mar. 13, 1866.
59,268	Rose, Jonathan H	Mount Sterling, Ill	Chalk line winders	Oct. 30, 1866.
58,300	Rose, Sherman H	Wheeler, N. Y	Fences	Sept. 25, 1866.
57,974	Rose, Timothy	Cortlandville, N. Y	Wells, method of separating sand from water in	Sept. 11, 1866.
53,682	Rose, William	St. Louis, Mo	Beer, apparatus for cooling	Apr. 3, 1866.
54,604	Rosefield, Charles	Washington, D. C	Tooth brushes	May 8, 1866.
53,882	Rosenberry, Christian, and Warren Tanner	Chicago, Ill	Vegetable slicer	Apr. 10, 1866.
58,889	Rosenberry, C	....do	Cork extractor	Oct. 16, 1866.
55,540	Rosenblatt, P. G	Greenville, Tenn	Medical composition	June 12, 1866.
	Rosenheim, M., and S. Drey. (*See* Tonnar, A., assignor.)			
52,888	Rosenthal, Morris	Philadelphia, Pa	Shirt-bosom patterns	Feb. 27, 1866.
57,048	Rosenthal, Theodore, assignor to J. Solmson, J. Meyer, and I. Schwab.	New York, N. Y	Neck-tie supporters	Aug. 7, 1866.
58,140	Rosier, D. C	Clarkson, N. Y	Harvesting beans, machine for	Sept. 18, 1866.
55,165	Ross, A. J	Rochester, N. Y	Alarm, burglar	May 31, 1866.
59,269	Ross, Amos W	Northfield, Mass	Cultivator	Oct. 30, 1866.
60,560	Ross, Charles, jr., and John	New York, N. Y	Steam generator flue brushes. (Antedated December 6, 1866)	Dec. 18, 1866.
53,883	Ross, George	Newport, Ky	Moulding and casting apparatus. (Antedated October 18, 1866)	Apr. 10, 1866.
56,272	Ross, G. M., and William H. West	New York, N. Y	Tobacco pipe and cigar holder	July 10, 1866.
59,456	Ross, James	Somerville, Mass	Engines, steam, paper packing joints in. (Antedated October 27, 1866.)	Nov. 6, 1866.
60,426	Ross, Levi, assignor to self and Oliver K. Phillips	Springfield, Mass	Curtain fixture. (Antedated November 24, 1866)	Dec. 11, 1866.
57,383	Ross, Robert and Thomas	Middlebury, Vt	Chucks	Aug. 21, 1866.
	Ross, T., *et al.* (*See* Taggart, J., assignor.) Reissue.			
	Ross, Thomas, and F. M. Strong. (*See* Strong & Ross.)			
	Ross, Thomas, and Andrew T. Merriman. (*See* Merriman & Ross.)			
59,457	Ross, Thomas J	Union, N. J	Stools, adjustable back for	Nov. 6, 1866.
54,962	Ross, W. J	Worcester, Mass	Fasteners, sash	May 22, 1866.
60,062	Roth, Frank J	Newark, Ohio	Piston packing	Nov. 27, 1866.
55,715	Roth, Julius A	Philadelphia, Pa	Hides, skins, furs, &c., for use, preparing	June 19, 1866.
54,606	Rotherham, John, and Joseph Holden	Middletown, N. Y	File-cutting machines	May 8, 1866.
53,683	Rothwell, Richard	Dover, N. H	Lathe chucks	Apr. 3, 1866.
	Rottcamp, D., *et al.* (*See* Miller & Reichert, assignors.)			
52,209	Rotton, Otto	Brooklyn, N. Y	Wells, obtaining oil from	Jan. 23, 1866.
56,994	Roulstone, E. A. G	Roxbury, Mass	Mosquito bar	Aug. 7, 1866.
59,270	Same	....do	Bags, carpet	Oct. 30, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,271	Roulstone, E. A. G	Roxbury, Mass	Bags, travelling	Oct. 30, 1866.
59,272	Same	....do	Trunks	Oct. 30, 1866.
59,458	Same	....do	Trunk, moulding	Nov. 6, 1866.
60,063	Same	....do	Brush, shoe	Nov. 27, 1866.
60 255	Same	....do	Bags, travelling	Dec. 4, 1866.
60,256	Same	....do	Bags, travelling	Dec. 4, 1866.
60,257	Same	....do	Locks	Dec. 4, 1866.
54,020	Rounds, M. M	New Haven, Conn	Lights, head	Apr. 17, 1866.
55,785	Rounds, M. M., assignor to self, William Zellner, and J. E. Jerold.	....do	Steam generators	June 19, 1866.
	Rounds, M. M., *et al.* (*See* Zellner, William, assignor.)			
53,385	Rouquayrol, Benoist	France	Air, apparatus for supplying a continuous flow of	Mar. 20, 1866.
59,529	Same	....do	Diving, regulating the flow of gases in apparatus of	Nov. 6, 1866.
58,484	Rouse, John	Port Gibson, N. Y	Roofing material	Oct. 2, 1866.
54,779	Rouse, Jonas	Dowagiac, Mich	Bed bottom	May 15, 1866.
	Rouse, Joseph, *et al.* (*See* Allen, Rouse & Melcher.)			
	Rouse, Wanton	Taunton, Mass	Spinning, self-acting mules for (Extension)	Oct. 27, 1866.
51,971	Rousseil, Emile	West Newark, N. J	Life preserver	Jan. 9, 1866.
56,995	Routt, Ansell P	Orange Court House, Va	Dough kneader	Aug. 7, 1866.
58,677	Roward, Archibald H	Allegheny, Pa	Car coupling	Oct. 9, 1866.
52,750	Rowe, A. H	Hartford, Conn	Latch, door. (Antedated September 2, 1865)	Feb. 20, 1866.
60,427	Rowe, Nathaniel	Emmittsburg, Md	Harvesters. (Antedated December 4, 1866)	Dec. 11, 1866.
54,963	Rowe, Philip C	Boston, Mass	Boiler tubes, tool for removing scales in	May 22. 1866.
58,193	Rowell, Benning	Elmira, N. Y	Fence	Sept. 18, 1866.
56,102	Rowell, John S. and Ira	Beaver Dam, Wis	Cultivators	July 3, 1866.
52,889	Rowell, Rufus, and Francis H. Briggs	Boston, Mass	Carriage springs, device for holding	Feb. 27, 1866.
58,678	Rowing, Esau	Parkersburg, West Va	Steam generators	Oct. 9, 1866.
52,080	Rowland, Charles	Clinton, Ill	Fence, portable	Jan. 16, 1866.
	Rowland, Charles, and Jacob Custer. (*See* Custer & Rowland.)			
51,972	Rowland, Newton	Hilltown, Pa	Calculating machine	Jan. 9, 1866.
60,064	Rowley, Henry B	Rushville, N. Y	Axle box	Nov. 27, 1866.
57,639	Rowley, James F., William M. Sloane, and James E. Woodruff, assignors to selves and John D. Cross.	Buffalo, N. Y	Air, apparatus for carburetting	Aug. 28, 1866.
	Rowley, Reuben. (*See* Aiken, John H., assignor.)			
56,802	Rowse, Edward	Augusta, Maine	Steering apparatus	July 31, 1866.
58,485	Roy, Joseph	Boston, Mass	Nails, horseshoe, machines for forging	Oct. 2, 1866.
	Royce, J. H., *et al.* (*See* Keck, Rudolph, assignor.)			
58,301	Royce, P. A	Buffalo, N. Y	Medicators, mechanical	Sept. 25, 1866.
57,384	Royer, Tobias	Lancaster, Pa	Fly-flaps	Aug. 21, 1866.
53,684	Roys, Thomas Welcome	New York, N. Y	Whales, sunken, and other bodies, tackle for raising	Apr. 3, 1866.
54,211	Roys, Thomas W., and G. A. Lilliendahl	....do	Harpoons, rocket	Apr. 24, 1866.
	Rubber Clothing Company. (*See* Picot, Lionce, ass'r.) Design.			
	Same.			
	Same.			
	Same.			

	Same.			
	Rubens, Charles, & Co. (*See* Theurer, F. Robert, assignor.)			
	Ruby, G. W., and Lewis Bridge. (*See* Bridge & Ruby.)			
59,459	Rucker, D. H., John E. Allen, and Jacob S. Smith	Washington, D. C	Ambulance	Nov. 6, 1866.
55,541	Rudd, C. H	Sandusky, Ohio	Telegraphic repeaters	June 12, 1866.
2,222	Rudolph, F., assignor to R. Vollschwitz and J. J. Schlaepfer	New York, N. Y	Locks (Reissue)	Apr. 10, 1866.
54,021	Rudolph, William, and Augustus Braun	San Francisco, Cal	Gun locks	Apr. 17, 1866.
55,716	Same	do	Gun locks	June 19, 1866.
	Rue, James B. (*See* Crowell, Solomon, assignor.)			
	Rufe, Theodore. (*See* Parker, Thomas, assignor.)			
54,212	Ruggles, Stephen P	Boston, Mass	Shaft coupling	Apr. 24, 1866.
54,780	Same	do	Steam generators	May 15, 1866.
	Rummel, Christian. (*See* Schwein, Jacob H., assignor.)			
53,044	Rumpf, F	Cold Spring, N. Y	Cranes	Mar. 6, 1866.
59,863	Rumrill, J. L	Hartford, Vt	Water-wheels	Nov. 20, 1866.
57,385	Rumsey, Jesse B	Washington, D. C	Car coupling	Aug. 21, 1866.
53,235	Rumsey, Jesse B., assignor to James G. Rumsey	Tiffin, Ohio	Car brake	Mar. 13, 1866.
54,022	Same	do	Buttons	Apr. 17, 1866.
54,213	Rundell, C	Chicago, Ill	Hay and straw stacker	Apr. 24, 1866.
56,273	Same	do	Hay stacker	July 10, 1866.
59,273	Rundell, Lorenzo D	South Westerlo, N. Y	Car brake	Oct. 30, 1866.
60,065	Rundell, William T	Genoa, N. Y	Hay forks	Nov. 27, 1866.
60,066	Same	do	Carriage tops	Nov. 27, 1866.
	Rundlett, S. C., *et al.* (*See* Howard, David, assignor.)			
	Same.			
	Same. (*See* Sawyer, Charles H., assignor.)			
54,963	Runk, Jacob L., James H. Brown, and Elias M. Morgan	Nashville, Ill	Ploughs, gang	May 22, 1866.
	Runstetler, Andrew, and Albert Windeck. (*See* Windeck & Runstetler.)			
53,348	Runyan, Andrew J	Ashland, Ind	Medical composition	Mar. 20, 1866.
58,890	Runyon, William M., R. H. Heller, and D. B. Morris	Oskaloosa, Iowa	Medicine for hog cholera	Oct. 6, 1866.
52,321	Ruperts, John B., assignor to self, E. S. and Butler Coles	Jersey City, N. J	Hulling cotton seed, machine for	Jan. 30, 1866.
58,891	Ruset, Charles F	Communipaw, N. J	Engines, cylinder, revolving	Oct. 16, 1866.
	Russ, Augustus. (*See* Niles, Peter H., assignor.)			
	Same.			
56,615	Russ, James J	Worcester, Mass	Knife and scissors sharpener	July 24, 1866.
57,191	Same	do	Planing machines	Aug. 14, 1866.
	Russell & Erwin Manufacturing Co. (*See* Brooks, Asa T., ass'r.)			
	Same. (*See* Waterman, Nathaniel, assignor.) Reissue.			
60,258	Russell, Edwin	Naugatuck, Conn	Chuck for holding buttons	Dec. 4, 1866.
55,910	Russell, E. P	Manlius, N. Y	Reaping machines	June 26, 1866.
	Same. (*See* Richardson, H. Stone, assignor.)			
	Russell, E. S., and Silas Pratt. (*See* Davis, George W., assignor.)			
53,685	Russell, George H	Dickinson, Pa	Jar, fruit	Apr. 3, 1866.
	Russell, G. P., *et al.* (*See* Orbeton, William W. S., assignor.)			
52,449	Russell, Henry W	Stoughton, Mass	Meat and vegetable chopping machine	Feb. 6, 1866.
60,643	Russell, Jacob	Brooklyn, N. Y	Stalk, corn cutter, and corn husker	Dec. 18, 1866.
52,450	Russell, John	Sing Sing, N. Y	Files, process for hardening	Feb. 6, 1866.
53,834	Same	do	Chisels, holders for	Apr. 10, 1866.
56,274	Russell, John L	Pella, Iowa	Planter, cotton-seed	July 10, 1866.
	Russell, Joseph G. (*See* Hall, Robert L., assignor.)			
55,717	Russell, Loomis W	Galesburg, Mich	Buckle	June 19, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Russell, S. I. (*See* Charles, S. Frederick, assignor.)			
57,192	Russell, William A.	Lawrence, Mass.	Paper, manufacture of	Aug. 14, 1866.
	Russell, W. E., *et al.* (*See* Baldwin, C. W., assignor.)			
	Russell, William H., and E. D. Finch. (*See* Wright, E. B., ass'r.)			
58,028	Rust, D. W., and George Buzzee, assignors to the East Hampton Rubber Thread Company.	East Hampton, Mass.	Rubber into thread, machine for cutting	Sept. 11, 1866.
56,103	Rust, Jacob L.	Oquaka Junction, Ill.	Churns	July 3, 1866.
	Rust, James E. (*See* Staples, E. L., assignor.)			
57,572	Ruth, Francis E., and Joseph De Long	Upper Sandusky, Ohio	Stove-pipe drum	Aug. 28, 1866.
60,428	Rutherford, C. D.	Brooklyn, N. Y.	Corsets	Dec. 11, 1866.
53,934	Ruthven, Morris West.	England	Steering apparatus	Apr. 10, 1866.
53,936	Same	....do	Rudder	Apr. 10, 1866.
53,937	Same	....do	Vessels, sluice for propelling	Apr. 10, 1866.
52,009	Ruttan, H. Jones	Coburg, C. W.	Ventilating railroad cars, apparatus for	Jan. 9, 1866.
58,302	Ryan, John T.	Brooklyn, N. Y.	Soap, manufacture of	Sept. 25, 1866.
58,303	Same	....do	Soaps, and other purposes, silicated liquids for manufacture of	Sept. 25, 1866.
52,210	Ryan, Joseph	St. Louis, Mo.	Jacks, hydraulic	Jan. 23, 1866.
52,324	Same	....do	Jacks, hydraulic	Jan. 30, 1866.
53,045	Ryder, Alfred V.	New York, N. Y.	Trunk and bureau	Mar. 6, 1866.
58,141	Same	....do	Trunk	Sept. 18, 1866.
57,193	Ryder, Andrew V.	Germano, Ohio	Hay forks, horse	Aug. 14, 1866.
53,046	Ryder, E. P.	Brooklyn, N. Y.	Motion, treadle	Mar. 6, 1866.
	Ryder, George T. (*See* Smith, Lewis, assignor.)			
59,460	Ryder, Henry	New Bedford, Mass.	Candle moulds, tubular plungers for. (Antedated July 18, '66.)	Nov. 6, 1866.
59,749	Same	....do	Candles, paraffine, manufacture of	Nov. 20, 1866.
	Ryder, S. O. (*See* Anderson, Robert, assignor.)			
52,890	Ryerson, Ira J.	Pierceton, Ind.	Churns	Feb. 27, 1866.
53,885	Ryerson, Van Buren	New York, N. Y.	Metals, precious, from other substances, apparatus for separating the.	Apr. 10, 1866.
54,412	Same	....do	Metals, precious, from ores, method of extracting	May 1, 1866.
57,194	Same	....do	Ores, desulphurizing	Aug. 14, 1866.
56,275	Rymond, Jonas	Erwinna, Pa.	Water elevators	July 10, 1866.
2,286	Saarbach, Louis	Philadelphia, Pa.	Tobacco pipe (Design)	Mar. 27, 1866.
2,304	Same	....do	Tobacco pipe (Design)	May 1, 1866.
2,309	Same	....do	Tobacco pipe (Design)	May 8, 1866.
58,036	Sabathé, Emile, and Louis Jourdan	France	Preservative material, impregnating substances with	Sept. 11, 1866.
52,751	Sabbaton, Tyler	New York, N. Y.	Gas, illuminating, apparatus for the manufacture of	Feb. 20, 1866.
	Sackett, Davis & Company. (*See* Lancelott, James, assignor.) Reissue.			
52,752	Saeger, Absalom	Meadville, Pa.	Packer, wool	Feb. 20, 1866.
60,259	Safely, Robert.	Cohoes, N. Y	Shafting, machines for turning	Dec. 4, 1866.
60,260	Same	....do	Shafting, machines for straightening	Dec. 4, 1866.
53,686	Saffer, Anton	New York, N. Y.	Wells, artesian, boring	Apr. 3, 1866.
57,776	Safford, E.	Boston, Mass	Card rack	Sept. 4, 1866.
60,261	Safford, Henry W.	Philadelphia, Pa.	Wells, drills for	Dec. 4, 1866.

59,662	Safford, Larkin S	Hope, Maine	Stanchion	Nov. 13, 1866.
58,486	Safford, Nelson	Pleasant Valley, Vt	Planter, hand	Oct. 2, 1866.
55,367	Saffray, Charles	New York, N. Y	Fuel, artificial, manufacture of	June 5, 1866.
54,023	Sage, S. L	Huntington, Ohio	Sheep holder and shearing table	Apr. 17, 1866.
57,975	Sager, Daniel	Albany, N. Y	Wagon brakes	Sept. 11, 1866.
57,261	Sager, M. S., assignor to S. B. Yeoman	Washington, D. C	Pans, sheet-metal, machine for making	Aug. 14, 1866.
60,561	Saiger, J. F., and A. Davis	Shelby, Ohio	Fruit pickers	Dec. 18, 1866.
55,166	Saladee, Cyrus W	Newark, Ohio	Padlocks. (Antedated May 24, 1866)	May 29, 1866.
55,167	Same	do	Padlocks. (Antedated May 24, 1866)	May 29, 1866.
56,450	Same	do	Padlocks	July 17, 1866.
56,616	Same	do	Padlocks	July 24, 1866.
56,617	Same	do	Padlocks	July 24, 1866.
59,079	Same	do	Water drawers	Oct. 24, 1866.
53,491	Saladee, Cyrus W., and Thomas Simpson	do	Plough-points	Mar. 27, 1866.
56,451	Saladee, Cyrus W., and William Armstrong	do	Padlocks	July 17, 1866.
58,304	Saladee, Cyrus W., and William Veach	do	Movement, mechanical	Sept. 25, 1866.
58,892	Saladee, Cyrus W., and T. R. Eddy	do	Chimney	Oct. 16, 1866.
60,262	Saladee, Cyrus W., and Jesse R. Moore	do	Sheep chair	Dec. 4, 1866.
55,911	Salie, W. T	Bowdoinham, Mass	Medical compound	June 26, 1866.
54,214	Salisbury, Silas C	New York, N. Y	Gases from oils, retorts for generating	Apr. 24, 1866.
54,215	Same	do	Furnaces, blast	Apr. 24, 1866.
54,216	Same	do	Combustion of coal, &c., apparatus for applying oil and water to assist the.	Apr. 24, 1866.
58,556	Salisbury, William H., assignor to self and Jesse A. Locke	Providence, R. I.	Carding engines, &c., wool-oiling machinery for	Oct. 2, 1866.
	Sallee, A., *et al.* (*See* Van Bebber, Sallee & Britton.)			
55,368	Salmon, J. A	Boston, Mass	Dentists' chairs	June 5, 1866.
57,777	Salsbury, George S	Clarendon, N. Y	Vines, grape, training	Sept. 4, 1866.
53,047	Salvotti, Peter A	New York, N. Y	Telegraphic cables	Mar. 6, 1866.
	Sames, Peter, and Theophilus S. Bertrand. (*See* Bertrand & Sames.)			
	Sampson, Edward C. (*See* Meyer, Charles T., assignor.) Design.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same. (*See* Hoskin, Robert, assignor.) Design.			
57,640	Sampson, Elnathan, assignor to Alfred C. Hitchcock	Lansingburg, N. Y	Scales, platform	Aug. 28, 1866.
57,641	Same	do	Scales, weigh-lock	Aug. 28, 1866.
54,072	Sampson, William S., assignor to self and Theodore Bourne	New York, N. Y	Metres, grain. (Antedated April 10, 1866)	Apr. 17, 1866.
59,750	Samson, Barclay	Cortlandville, N. Y	Medical compound	Nov. 20, 1866.
	Samuel, A. R. (*See* Elliott, Oliver O. G., assignor.)			
57,976	Sanborn, Benjamin F	Boston, Mass	Belt lacing, machine for cutting	Sept. 11, 1866.
57,373	Sanborn, George H	do	Churns	Aug. 28, 1866.
	Sanborn, Ira E., assignee of John C. Bickford. (*See* Hayward & Sanborn.) Reissue.			
	Same.			
	Same.			
56,452	Sanborn, Rufus S	Ripon, Wis	Safes	July 17, 1866.
57,977	Same	do	Clothespin	Sept. 11, 1866.
58,679	Same	do	Bed bottom	Oct. 9, 1866.
2,390	Same	do	Safes (Reissue)	Nov. 6, 1866.
53,886	Sanborn, Rufus S., and William Bennett	do	Stove-pipe damper	Apr. 10, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,718	Sanders, George W.	Springfield, Vt.	Dough-kneader	June 19, 1866.
52,611	Sanders, Smith	Fort Plain, N. Y.	Fences	Feb. 13, 1866.
55,168	Sanders, Thomas H. B.	Philadelphia, Pa.	Heating and ventilating railroad cars	May 29, 1866.
	Sands, Joseph J., *et al.* (*See* Sigerfoos, Sands & Fry.)			
60,067	Sanford, D. T.	New York, N. Y.	Tubes, brass, machinery for embossing	Nov. 27, 1866.
53,927	Sanford, F. S., and D. Wheeler, assignors to Glover, Sanford & Sons, and D. Wheeler.	Bridgewater, Conn.	Sewing machines for sewing the sweat-linings to hats	Apr. 10, 1866.
	Sanford, Harroun & Company. (*See* Cushing, William T., ass'r.)			
58,893	Sanford, John F.	Keokuk, Iowa	Lamp burners	Oct. 16, 1866.
60,263	Same	do	Lamp burners	Dec. 4, 1866.
59,274	Sanford, N. M.	Vienna, Ohio	Washing machine	Oct. 30, 1866.
	Sanford, W., *et al.* (*See* Martin, B. G., assignor.)			
59,080	Sangster, James	Buffalo, N. Y.	Brick machine	Oct. 23, 1866.
53,379	Sangster, James, Amos W. and William H., assignors to selves, H. Sangster, and T. J. Conroy.	do	Ink, manufacture of. (Antedated March 5, 1866)	Mar. 20, 1866.
54,607	Sangster, James, and Oran W. Seeley	do	Neckties, paper	May 8, 1866.
55,429	Sangster, James, and Milton Boyd, assignors to J. B. Liehtenstein	do	Mop	June 5, 1866.
54,414	Sangster, William H.	do	Petroleum, apparatus for refining	May 1, 1866.
60,068	Same	Chicago, Ill.	Lamps	Nov. 27, 1866.
56,276	Sangster, William H., and Theodore C. Spencer	Buffalo, N. Y.	Petroleum, distilling	July 10, 1866.
57,386	Sangster, William H., and Justin C. Ware	Titusville, Pa.	Engines, steam, valves for	Aug. 21, 1866.
52,753	Sanor, G. W., and Jacob Stoffer	Hanoverston, Ohio New Chambersburg, Ohio	Horse-power	Feb. 20, 1866.
59,275	Sappenfield, Charles W.	Crawfordsville, Ind.	Sawing machines	Oct. 30, 1866.
	Sargent & Company. (*See* McArthur, Duncan, assignor.)			
	Same. (*See* Bradford, P., assignor.) Design.			
	Same. (*See* Neiberg, C. L., assignor.) Design.			
	Same. (*See* Bradford, Purmost, assignor.)			
	Same. (*See* Randall, Augustus A., assignor.)			
	Same. (*See* Neiberg, C. L., assignor.) Design.			
	Sargent, Charles G., *et al.* (*See* Murkland, William, assignor.)			
52,081	Sargent, G. W., and B. P. Rider	Chelsea, Mass.	Nail, horseshoe, machine	Jan. 16, 1866.
55,912	Sargent, G. W., and B. P. Rider	Fair Haven, Mass. Chelsea, Mass.	Nails, horseshoe, machines for making	June 26, 1866.
55,369	Sargent, Howard	Boston, Mass.	Trusses	June 5, 1866.
57,574	Sargent, James	Rochester, N. Y.	Locks	Aug. 28, 1866.
51,973	Sargent, James, and H. W. Covert	do	Locks	Jan. 9, 1866.
2,310	Sargent, J. B., assignor to Sargent & Company	New Haven, Conn.	Hook, coat and hat (Design)	May 8, 1866.
54,217	Sargent, James F.	South Strafford, Vt.	Chair	Apr. 24, 1866.
60,429	Sargent, Stephen	Lowell, Mass.	Oil cans	Dec. 11, 1866.
2,158	Sargent, Sumner, assignor, through mesne assignments, to self, A. P. Knapp, and E. Miller.	Watertown, Mass.	Lanterns, coal-oil (Reissue)	Jan. 23, 1866.
54,781	Sargent, William H.	Weymouth, Mass.	Washing machine	May 15, 1866.
57,575	Saroni, Herrman	Marietta, Ohio	Steam generators	Aug. 28, 1866.
57,576	Same	do	Steam generators, feed-water heaters for	Aug. 28, 1866.

57,577	Same	....do	Steaming vegetables, &c., apparatus for	Aug. 28, 1866.
57,578	Same	....do	Burners, vapor	Aug. 28, 1866.
60,562	Same	Baltimore, Md.	Steam generators	Dec. 18, 1866.
55,443	Sarony, Oliver	England	Photographic rests	June 5, 1866.
59,663	Satterlee, Curtis	Paris, Ill	Rakes, horse	Nov. 13, 1866.
58,142	Satterly, William R.	Port Jefferson, N. Y.	Blocks, davit-fall, hook for	Sept. 18 1866.
	Sauerbier, Henry, and John Stadermann. (*See* Stadermann & Sauerbier.)			
54,258	Sauers, Louis, assignor to self and H. Shaffner	Mount Joy, Pa.	Hammer, furrowing	Apr. 24, 1866.
54,964	Saul, Sarah E.	New York, N. Y.	Boiler for culinary purposes	May 22, 1866.
57,579	Sault, Thomas	New Haven, Conn.	Engine, steam, slide valves	Aug. 28, 1866.
59,461	Saunders, William H. H.	Troy, N. Y.	Brush and box, blacking	Nov. 6, 1866.
	Saunderson, C. B., *et al.* (*See* Bradford, Charles K., assignor.)			
54,608	Saur, Anton, and Albert B. Colton	Franklin, Ind.	Sawing machines	May 8, 1866.
56,998	Sausser, William	Hannibal, Mo.	Knives	Aug. 7, 1866.
56,618	Sauter, L.	Jersey City, N. J.	Rings, finger, scarf, and napkin	July 24, 1866.
58,894	Sauter, Lorenzo	....do	Breastpins	Oct. 16, 1866.
52,612	Savage, Elliott, assignor to self, George S. Harwood, and George H. Quincy.	West Meriden, Conn.	Steel and other metals, process of annealing	Feb. 13, 1866.
52,791	Same	....do.	Iron into steel, process of converting	Feb. 20, 1866.
2,308	Savage, Elliott, assignor, through mesne assignments, to the American Metal Company.	....do.	Iron and steel, plating, tempering, and hardening....(Reissue)	July 10, 1866.
	Savage, Julius B., *et al.* (*See* Knowles, Wilson W., assignor.)			
	Savage, Simeon	Pomfret, N. Y.	Printing floor cloths, machines for....(Extension)	Feb. 28, 1866.
2,425	Savage, Silas T.	Albany, N. Y.	Stove, heating....(Reissue)	Dec. 18, 1866.
	Savage, S. T., and J. R. Clark. (*See* Clark & Savage.)			
58,305	Savary, George T.	Groveland, Mass.	Pea sheller	Sept. 25, 1866.
52,754	Savill, John	Monmouth, Ill.	Cultivators	Feb. 20, 1866.
58,179	Savill, Thomas, assignor to C. Jones & Cadbury	Philadelphia, Pa.	Steam generators, low-water detectors for	Sept. 18, 1866.
52,451	Savoral, Edvardt	New York, N. Y.	Engines, steam	Feb. 6, 1866.
60,264	Sawyer, A. M.	Athol, Mass.	Composition of matter for polishing metal	Dec. 4, 1866.
	Sawyer, Albert P. (*See* Curtis, Philip B., assignor.)			
55,913	Sawyer, Charles H.	Hollis, Maine	Railway switch	June 26, 1866.
59,276	Same	....do.	Hitching device	Oct. 30, 1866.
59,277	Same	Buxton, Maine	Halters	Oct. 30, 1866.
57,049	Sawyer, Chas. H., assignor to self, T. J. Little, and S. C. Rundlett.	Hollis, Maine	Cattle hitch	Aug. 7, 1866.
59,140	Sawyer, David, assignor to self and Robert Barber	Webster, Ohio	Ditching machine	Oct. 23, 1866.
54,965	Sawyer, Emery	Millbridge, Maine	Washing machine	May 22, 1866.
58,895	Sawyer, James J.	Woodstock, Conn.	Washer, dish	Oct. 16, 1866.
60,265	Sawyer, John	Moravia, N. Y.	Planes, miter	Dec. 4, 1866.
54,259	Sawyer, Langdon, assignor to Benjamin F. Sawyer	Springfield, Vt.	Mosquito bar	Apr. 24, 1866.
54,782	Sawyer, Leonard	South Amesbury, Mass.	Carriage bows, attaching props to	May 15, 1866.
58,680	Sawyer, S. B.	Charlestown, Mass.	Observatory	Oct. 9, 1866.
58,487	Sawyer, Nathaniel C.	Boston, Mass.	Emery, crude, from foreign substances, process of separating	Oct. 2, 1866.
55,719	Sayer, Adolf	Naubuc, Conn.	Fire-arms, breech-loading	June 19, 1866.
57,387	Sayer, James F.	Macomb, N. Y.	Stave jointers	Aug. 21, 1866.
	Sayer, R. M. (*See* Van Duzer, Isaac F., assignor.)			
59,278	Sayler, Henry	St. Paris, Ohio	Whip socket	Oct. 30, 1866.
53,887	Sayre, George W.	Pisgah, Ohio	Molasses, manufacture of. (Antedated March 25, 1866)	Apr. 10, 1866.
56,619	Sayre, Lewis G.	Cincinnati, Ohio	Rein, driving, overcheck	July 24, 1866.
52,755	Searlett, Augustus, assignor to self and Samuel A. Farrand	Newark, N. J.	Bottle stopper	Feb. 20, 1866.
55,542	Seattergood, H. V.	Albany, N. Y.	Gins, cotton	June 12, 1866

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,891	Schaefer, F. C	Dubuque, Iowa	Chessboards	Feb. 27, 1866.
52,452	Schaefer, John C	Philadelphia, Pa	Steam gauge cocks	Feb. 6, 1866.
55,720	Schaefer, P. G. H	West Meriden, Conn	Pots, tea and coffee	June 19, 1866.
53,347	Schaffer, George F	New York, N. Y	Dental impression cups	Mar. 20, 1866.
2,187	Schaffer, John	St. Louis, Mo	Capstan, steam (Reissue)	Mar. 6, 1866.
54,024	Scharit, Augustus W., and Leopold Oppenheimer	St. Louis, Mo / Washington, D. C	Locks, trunk	Apr. 17, 1866.
53,349	Schanck, L. F	Holmdel, N. J	Diggers, potato	Mar. 20, 1866.
59,081	Scharch, Henry	New York, N. Y	Carriage bodies, hanging	Oct. 23, 1866.
56,999	Schartan, Ejbert O	Philadelphia, Pa	Lamp chimneys	Aug. 7, 1866.
59,462	Schanck, H. K	Benville, Ill	Roofing, composition for	Nov. 6, 1866.
2,268	Schedler, Joseph, ass'or to the American Lead Pencil Company	Hudson City, N. J	Trade mark (Design)	Feb. 27, 1866.
2,269	Same	do	Trade mark (Design)	Feb. 27, 1866.
59,082	Scheidler, Reinhard	Newark, Ohio	Springs, door	Oct. 23, 1866.
57,978	Schenck, F	San Antonio, Texas	Gun locks	Sept. 11, 1866.
55,914	Schenck, J. H	Chicago, Ill	Gates, automatic	June 26, 1866.
58,681	Schenck, Samuel H	Zionsville, Ind	Leather, machine for splitting and skiving	Oct. 9, 1866.
	Schermerhorn, J. W. (*See* Munger, George, assignor.) Same.			
	Schermerhorn, Thos. K., *et al.* (*See* Bogardus, John F., assignor.) Same.			
52,325	Scherpf, George A	Hoboken, N. J	Gold, silver, and copper, process for parting	Jan. 30, 1866.
54,218	Schesch, H. A	Brooklyn, N. Y	Distilling, apparatus for	Apr. 24, 1866.
53,888	Schimming, Frederick	Philadelphia, Pa	Bed bottom	Apr. 10, 1866.
	Schlaepfer, J. J., and R. Vollschwitz. (*See* Rudolph, F., assignor.) Reissue.			
	Schlater, Francis, and Albert Kleinschmidt. (*See* Kleinschmidt & Schlater.)			
56,803	Schleisinger, Julius	New York, N. Y	Skirts, hoop	July 31, 1866.
	Schlichter, I., *et al.* (*See* Hall, Henry, assignor.)			
	Schmacker, Anton, and John Kline. (*See* Kline & Schmacker.)			
53,889	Schmandt, Ph. Louis	Hoboken, N. J	Registers, watchman's	Apr. 10, 1866.
56,104	Schmidt, George	New York, N. Y	Inkstand, wafer, sand box, letter and envelope holder, and pen rack, combined.	July 3, 1866.
57,195	Schmidt, Hermann	do	Clamps, screw, hand	Aug. 14, 1866.
60,430	Schmidt, John Georg	Rochester, N. Y	Barrels, machines for cutting bungs for	Dec. 11, 1866.
56,277	Schmidt, Rudolph	New York, N. Y	Harness bells. (Antedated June 26, 1866)	July 10, 1866.
52,211	Schmitt, Charles C	do	Ladder, step, library	Jan. 23, 1866.
58,682	Same	do	Chair	Oct. 9, 1866.
60,563	Schmitt, Franz M	Jamaica Plains, Mass	Sole-edge finishing tool	Dec. 18, 1866.
54,219	Schmitt, Peter, and Peter Jacob	Waterloo, Ill	Drills, grain	Apr. 24, 1866.
58,488	Schmucker, J. P	Ashland, Ohio	Wood-bending machines	Oct. 2, 1866.
57,580	Schnebly, William	Hackensack, N. J	Meters, grain	Aug. 28, 1866.
51,867	Schneider, Henry	Cleveland, Ohio	Cement for stone	Jan. 2, 1866.
55,915	Schneider, John	Williamsburg, N. Y	Extract of hops, &c., apparatus for producing	June 26, 1866.

56,453	Same	....do	Beer, lager, manufacture of	July 17, 1866.
56,804	Schneider, P. F	Hartford, Conn	Cartridge box, revolving	July 31, 1866.
	Schock, John, *et al.* (*See* Temple, James, assignor.)			
56,454	Schofield, Silas C	Freeport, Ill	Seeder and cultivator, combined	July 17, 1866.
	Schollhorn, William, and Frank P. Pfleghar. (*See* Pfleghar & Schollhorn.)			
57,268	Scholte, Jean T	France	Gas meters	Aug. 14, 1866.
60,069	Schooley, W. D	Richmond, Ind	Straw cutter	Nov. 27, 1866.
57,196	Schott, Charles	Nashville, Tenn	Lubricator	Aug. 14, 1866.
56,455	Schott, Joseph	Chicago, Ill	Pen and eraser, combined	July 17, 1866.
53,350	Schottenfels, Julius	New York, N. Y	Looms, operating shuttles in	Mar. 20, 1866.
53,890	Schon, Karl	Lafayette, Ind	Lamp snuffers	Apr. 10, 1866.
53,721	Schouller, Peter	Boston, Mass	Billiard tables	June 19, 1866.
	Schoultz, E. N., and H. R. Stone. (*See* Stone & Schoultz.)			
53,763	Schpakefosky, Alexandre, and Nicholas Stange	Russia	Burning liquid hydro-carbons, apparatus for	Apr. 3, 1866.
	Schradel, T. O. L., and Orazio Lugo. (*See* Lugo & Schrader.)			
52,453	Schramm, G. W., assignor to D. N. Ropes	New York, N. Y	Rulers	Feb. 6, 1866.
	Schreiber, J. G., and J. Trageser. (*See* Trageser & Schreiber.)			
59,664	Schreiber, Theodore	Wheeling, West Va	Combs	Nov. 13, 1866.
54,019	Schreiner, Henry, assignor to self and William H. Boyer	Philadelphia, Pa	Horseshoes	May 22, 1866.
59,726	Schrick, A., and H. Hildenbrand, assignors to selves, F. Krayer, and C. R. Schrick.	St. Louis, Mo	Collars, horse, machine for filling	Nov. 13, 1866.
59,727	Same	... do	Collars, horse, machine for stretching	Nov. 13, 1866.
59,038	Schroeder, C. W	New York, N. Y	Dishes, apparatus for drying	Oct. 23, 1866.
55,786	Schroeder, F. W., assignor to self and W. H. Hoskins	Philadelphia, Pa	Sabot	June 19, 1866.
60,564	Shroder, Herman F	Cincinnati, Ohio	Sugar, pans for evaporating	Dec. 18, 1866.
52,454	Schuffenecker, John F	St. Louis, Mo	Shafts, vertical lubricating	Feb. 6, 1866.
54,220	Schule, J. Adam	New York, N. Y	Motive power	Apr. 24, 1866.
53,687	Schuler, P	Philadelphia, Pa	Pianos, sound-board for	Apr. 3, 1866.
58,896	Schuler, Peter	....do	Piano-fortes	Oct. 16, 1866.
56,105	Schullian, Conrad	New York, N. Y	Faucets	July 3, 1866.
53,688	Schultz, Judson	Ellenville, N. Y	Tanning	Apr. 3, 1866.
2,285	Same	....do	Tanning (Reissue)	June 12, 1866.
	Schultz, Robert D., and John Hoge. (*See* Hoge & Schultz.) Design.			
2,459	Schulze, Leonhard, assignor to Thomas Mills & Brother	Philadelphia, Pa	Candy figure (Design)	Sept. 25, 1866.
2,460	Same	....do	Candy figure (Design)	Sept. 25, 1866.
2,461	Same	....do	Candy figure (Design)	Sept. 25, 1866.
2,462	Same	....do	Candy figure (Design)	Sept. 25, 1866.
2,463	Same	....do	Candy figure (Design)	Sept. 25, 1866.
2,464	Same	....do	Candy figure (Design)	Sept. 25, 1866.
2,465	Same	....do	Candy figure (Design)	Sept. 25, 1866.
2,466	Same	....do	Candy figure (Design)	Sept. 25, 1866.
51,868	Schuster, Auguste	St. Louis, Mo	Remedy for sore eyes	Jan. 2, 1866.
52,892	Schuyler, Daniel	Buffalo, N. Y	Organs, &c	Feb. 27, 1866.
56,106	Same	....do	Musical instruments	July 3, 1866.
	Schuyler, Isaac S., *et al.* (*See* Short, Joseph, assignor.)			
	Schuyler, Isaac S., and J. J. Eckel. (*See* Short, Joseph, assignor.) Reissue.			
	Same. (*See* Eckel & Schuyler.)			
	Same.			
	Schwab, J., *et al.* (*See* Rosenthal, Theodore, assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,805	Schwalbach, M	Milwaukee, Wis	Sewing machines	July 31, 1866.
54,966	Schwartz, Charles C. E	Philadelphia, Pa	Finger nails, instruments for cutting	May 22, 1866.
55,962	Schwarze, Joseph R. B., assignor to self and Daniel Pfeil	Washington, D. C	Liquid cooler	June 26, 1866.
52,648	Schwein, Jacob H., assignor to self and Christian Rummel	Cincinnati, Ohio	Furnace, hot-air	Feb. 13, 1866.
53,351	Schweizer, Franzis	New York, N. Y	Bolt-heading machines	Mar. 20, 1866.
58,683	Schemmer, J. G., and T. Müeller	Philadelphia, Pa	Fly fans	Oct. 9, 1866.
54,415	Schofield, Horace B	New York, N. Y	Grate bar	May 1, 1866.
57,448	Scofield, Levi, assignor to self and Justin B. Waite	Farmington, Wis	Looms	Aug. 21, 1866.
52,756	Scollay, George W	Washington, D. C	Burial cases	Feb. 20, 1866.
53,689	Scotchmer, H. E	Chicago, Ill	Brush, shoe	Apr. 3, 1866.
58,897	Scott, Amos R	Bethel, Ohio	Wagon, bow-fastening	Oct. 16, 1866.
	Scott, C., *et al.* (*See* Bazin, James A., assignor.)			
53,492	Scott, Charles A	Aurora, Ill	Bed bottom	Mar. 27, 1866.
	Scott, Charles A., *et al.* (*See* Kirkup, Lancelot, assignor.)			
53,190	Scott, George	Kensington, Pa	Lubricator	Mar. 13, 1866.
60,431	Scott, George, and John W. Smith, assignors to selves and James Smith.	Boston, Mass	Skate	Dec. 11, 1866.
	Scott, G. A., and I. S. Parsons. (*See* Estabrook, Alanson C., assignor.)			
60,565	Scott, Henry L	Plessis, N. Y	Fruit gatherer	Dec. 18, 1866.
51,974	Scott, John	Ocala, Florida	Trusses	Jan. 9, 1866.
	Same. (*See* Natty, Robert, assignor.)			
58,180	Scott, John B., assignor to self, George Hall, and S. Moss.)	Hyattsville, Md	Fluid, burning	Sept. 11, 1866.
53,048	Scott, Rufus	Watertown, N. Y	Cheese, turning	Mar. 6, 1866.
	Scott, S. M., and A. F. Spaulding. (*See* Foster, Clinton A., assignor.)			
	Scott, Thomas. (*See* Woburn, Jacob, assignor.)			
54,783	Scotton, Stephen	Richmond, Ind	Railroad tracks, device for shooting gravel at cows upon	May 15, 1866.
59,463	Scoville, H. H., P. W. Gates, and D. R. Fraser	Chicago, Ill	Quartz mills	Nov. 6, 1866.
55,916	Scoville, J	Buffalo, N. Y	Car wheels, manufacture of	June 27, 1866.
52,326	Screven, Sparkman R	Philadelphia, Pa	Teeth, artificial	Jan. 30, 1866.
53,352	Scribner, John C	Holderness, N. H	Churns	Mar. 20, 1866.
56,806	Scripture, Eliphalet S	Williamsburg, N. Y	Shoestring fastener	July 31, 1866.
54,221	Scudder, John M	Cincinnati, Ohio	Disinfecting apparatus	Apr. 24, 1866.
57,581	Seabaugh, Conrad	San Antonio, Texas	Fence	Aug. 28, 1866.
52,893	Seal, William D	Washington, D. C	Gas, illuminating, manufacture of	Feb. 27, 1866.
55,169	Seaman, John F	Cortlandville, N. Y	Churns	May 29, 1866.
53,049	Seaman, Joseph S	Pittsburg, Pa	Metals, apparatus for rolling	Mar. 6, 1866.
57,388	Same	do	Iron or steel, rolling	Aug. 21, 1866.
54,025	Searle, Thomas A	Providence, R. I	Valves, globe	Apr. 17, 1866.
55,722	Same	do	Nail-plate feeders	June 19, 1866.
54,609	Sears, Elijah C	Crystal Lake, Ill	Sifter, flour and meal	May 8, 1866.
52,082	Sears, William H	Cheshire, Conn	Tide wheels	Jan. 16, 1866.
59,141	Seaver, George A., assignor to Alexander H. Seaver	New Orleans, La	Bale, cotton, ties	Oct. 23, 1866.
	Seck, William, and F. Henckel. (*See* Henckel & Seck.)			

58,143	Secrist, Samuel	West Liberty, Ohio	Harvesters, corn	Sept. 18, 1866.
58,306	Sedgwick, Alonzo	Poughkeepsie, N. Y	Wrench, adjustable	Sept. 25, 1866.
	See, William S. (*See* Stoekmar, Alexander C., assignor.)			
56,456	Seeberger, Leopold, and N. Levy	Cincinnati, Ohio	Press, baling	July 17, 1866.
59,084	Seefeld, Charles	Lomira, Wis	Gates	Oct. 23, 1866.
56,278	Seekins, Heber G	Elyria, Ohio	Bed bottom	July 10, 1866.
54,967	Seeley, David W	Albany, N. Y	Brick presses	May 22, 1866.
54,619	Seeley, D. W., and F. Jaeobie	do	Brick machine	May 8, 1866.
57,389	Seeley, Frank B	Johnson's Creek, N. Y	Egg-testers	Aug. 21, 1866.
54,026	Seeley, Austin, and John M. Cabbell	Alton, Ill Keokuk, Iowa	Valve gear	Apr. 17, 1866.
	Seeley, Charles, and Silas R. Divine. (*See* Divine & Seeley.)			
57,390	Seely, E. D	Brookline, Mass	Fluid, burning	Aug. 21, 1866.
57,582	Seely, Oran W	Buffalo, N. Y	Churns	Aug. 27, 1866.
	Same. (*See* Watson, John, assignor.)			
	Seely, Oran W., and James Sangster. (*See* Sangster & Seely.)			
53,891	Seely, S. F	Sylvania, Ohio	Ploughs	Apr. 10, 1866.
59,928	Seely, Samuel J	New York, N. Y	Roofing and clapboarding	Nov. 20, 1866.
	Seelye, J. C., and William L. Lockhart. (*See* Lockhart & Seelye.)			
	Design.			
51,869	Seevers, Henry	Perry Township, Ohio	Racks, sheep	Jan. 2, 1866.
53,380	Sefton, Josiah W., assignor to self and James McCreary	Gettysburg, Pa	Churns	Mar. 20, 1866.
59,279	Seger, E. S., and J. C. Ormiston	Erie, Ill	Cultivator	Oct. 30, 1866.
57,197	Segondy, Jean	St. Louis, Mo	Meat-cutter for sausages. (Antedated July 31, 1866)	Aug. 14, 1866.
60,566	Seher, Henry	do	Burners, gas, ventilating fan for	Dec. 18, 1866.
54,784	Seibel, Jaeob	Manlius, Ill	Harvesters. (Antedated May 1, 1866)	May 15, 1866.
52,327	Seiberling, John F	Doylestown, Ohio	Harvesters	Jan. 30, 1866.
54,611	Same	do	Harvesters	May 8, 1866.
57,583	Same	Akron, Ohio	Harvesters	Aug. 28, 1866.
	Same. (*See* Ray & Shalters, assignors.) Reissue.			
57,445	Seitzinger, G., assignor to self and John Armstrong	Ottawa, Ill	Grain gate	Aug. 21, 1866.
52,649	Selden, Samuel, assignor to John C. Selden	Fairview Township, Pa	Hinges	Feb. 13, 1866.
57,391	Selick, Henry	Lewiston, Pa	Apple parer and corer	Aug. 21, 1866.
53,086	Selkirk, Alexander, assignor to Eliza J. Selkirk	Albany, N. Y	Buttons	Mar. 6, 1866.
55,723	Sellers, William	Philadelphia, Pa	Planing machines	June 19, 1866.
58,898	Sellers, William	New York, N. Y	Locks	Oct. 16, 1866.
54,612	Sellon, Andrew J	Boston, Mass	Knife cleaner	May 8, 1866.
57,833	Sells, Hugh	Vienna, C. W	Mills, cider	Sept. 4, 1866.
57,269	Selwyn, Jasper H	England	Fire-arms, breech-loading	Aug. 14, 1866.
52,212	Sennett, George B., and Henry Essex	Meadville, Pa	Skate	Jan. 23, 1866.
57,778	Senniksen, Hans Henrik	Richmond, Ind	Stove-pipe damper	Sept. 4, 1866.
53,493	Sergeant, Henry C	New York, N. Y	Steam generators	Mar. 27, 1866.
60,266	Service, James	Greenville, Conn	Lathes, tool rests for	Dec. 4, 1866.
55,543	Sessions, Albert J	Bristol, Conn	Bag frames	June 12, 1866.
2,345	Same	do	Bag frames (Reissue)	Aug. 28, 1866.
55,210	Severance, James F., assignor to self, E. C. Bennett, and O. W. Wade.	East Bridgewater, Mass	Stove-pipe thimble	May 29, 1866.
58,899	Severns, John T	Burlington, N. J	Fruit boxes	Oct. 16, 1866.
	Same. (*See* Sherman, Joseph, assignor.)			
59,464	Seward, Moses	New Haven, Conn	Rods or bars, metallic, machine for upsetting and forming articles from.	Nov. 6, 1866.
59,665	Seward, W. B	Bloomington, Ind	Sorghum skimmer	Nov. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,328	Sewell, George	Brooklyn, N. Y	Car wheels to axles, mode of attaching	Jan. 30, 1866.
54,073	Sewell, George, assignor to the American Tool and Machine Co	Poughkeepsie, N. Y	Salino-meter pots	Apr. 17, 1866.
58,307	Sexton, Daniel	San Gabriel, Cal	Valves, rotary	Sept. 25, 1866.
55,370	Sexton, D. F	Whiting, Vt	Racks, sheep	June 5, 1866.
54,416	Sexton, T. E	Wilmington, Del	Printing photographic pictures, frame for	May 1, 1866.
55,917	Seymour, Frederick J	Wolcottville, Conn	Picture nails	June 26, 1866.
57,384	Seymour, G. H., and W. B. Barnard	Waterbury, Conn	Buttonhole cutter	Aug. 28, 1866.
	Seymour, Henry. (*See* Evans & Seymour, assignors.)			
	Seymour, Henry J. (*See* Nelson, Caleb S., assignor.)			
54,613	Seymour, J. H	Hagerstown, Md	Spittoon for railroad cars	May 8, 1866.
59,280	Same	....do	Spittoon for railroad cars	Oct. 30, 1866.
54,222	Seymour, James M	Newark, N. J	Slats, blind, machine for tenoning	Apr. 24, 1866.
	Same. (*See* Whitlock, Daniel, assignor.)			
	Seymour, Robert H., and Joseph Evans. (*See* Evans & Seymour.)			
	Seymour, R. M., and James B. Sharp. (*See* Sharp & Seymour.)			
52,757	Seymour, William H	Liverpool, N. Y	Clamps for stages	Feb. 20, 1866.
	Shaffner, H. (*See* Sauers, Lewis, assignor.)			
55,371	Shaffner, T. P	Louisville, Ky	Preserving vegetable fibre, method of	June 5, 1866.
56,620	Same	....do	Nitro-glycerine, method of packing	July 24, 1866.
59,281	Same	....do	Paper, manufacture of	Oct. 30, 1866.
60,432	Same	....do	Telegraphs, magnets for	Dec. 11, 1866.
60,567	Same	....do	Shells, &c., charging	Dec. 18, 1866.
60,568	Same	....do	Graduating vessels, method of	Dec. 18, 1866.
60,569	Same	....do	Fuses, electric	Dec. 18, 1866.
60,570	Same	....do	Presses, hydraulic, to prevent corrosion	Dec. 18, 1866.
60,571	Same	....do	Gun-cotton, manufacture of	Dec. 18, 1866.
60,572	Same	....do	Blasting, artillery and mining	Dec. 18, 1866.
60,573	Same	....do	Blasting with nitroleum, method of	Dec. 18, 1866.
	Shailer, J. S. (*See* Weed, Charles, assignor.)			
60,267	Shailer, Warren	Deep River, Conn	Fastener, window	Dec. 4, 1866.
2,341	Shailer, Reuben	Madison, Conn	Balances (Reissue)	Aug. 21, 1866.
58,489	Same	....do	Ovens, bakers', turn-tables for	Oct. 2, 1866.
55,918	Shaller, Friedrich	Hudson, N. Y	Drilling machine	June 26, 1866.
57,775	Same	....do	Watchmakers' lathes	Sept. 4, 1866.
60,070	Same	....do	Blow-pipe	Nov. 27, 1866.
51,975	Shalters, M. R	Alliance, Ohio	Harvesters	Jan. 9, 1866.
56,621	Same	....do	Hame fastener	July 24, 1866.
60,574	Shalters, M. R., and T. Catern, assignors to selves, S. Ray, and S. Thomas.	....do	Hame fastener	Dec. 18, 1866.
	Shalters, M. R., and S. Ray. (*See* Ray & Shalters.) Reissue.			
	Shank, J. J., and C. Albert. (*See* Albert & Shank.)			
58,308	Shankland, J. W	Summerfield, Ohio	Fences	Sept. 25, 1866.
59,282	Shannon, Zaccheus B	Port Washington, Ohio	Churns	Oct. 30, 1866.
54,615	Shapley, D. M	St. Louis, Mo	Pumps, syphon and force, pressure heads for	May 8, 1866.
60,575	Shapter, John S	New York, N. Y	Tallow, lard, &c., process of rendering and bleaching	Dec. 18, 1866.

	Shapter, Samuel. (*See* Halligan, Thomas J., assignor.)			
57,879	Sharcs, Daniel W	Hamden, Conn	Stripper, sorghum	Sept. 11, 1866.
2,512	Sharp, George	Philadelphia, Pa	Fork or spoon, handle of a (Design)	Nov. 27, 1866.
	Sharp, G. C., *et al.* (*See* Warner, William, assignor.)			
	Sharp, Hugh, and Alexander C. Wills. (*See* Wills & Sharp.)			
	Sharp, James	Brooklyn, N. Y	Label cards (Extension)	June 14, 1866.
59,465	Sharp, James B., and R. M. Seymour	New York, N. Y	Suspenders	Nov. 6, 1866.
51,870	Sharp, Thomas	Nashville, Tenn	Tanning, apparatus for	Jan. 2, 1866.
57,198	Sharp, Thomas	Carlisle, Pa	Car seats and couches	Aug. 14, 1866.
54,832	Sharpe, Edmund	France	Fuel, artificial	May 15, 1866.
	Sharpe, Lucien, *et al.* (*See* Grant, Lewis F., assignor.)			
54,417	Sharpe, William A	Syracuse, N. Y	Well tubes, filter for	May 1, 1866.
54,418	Shattuck, A. N	San Francisco, Cal	Water by waves, raising	May 1, 1866.
	Shattuck, Henry, and Bennett Hotchkiss. (*See* Hotchkiss & Shattuck.)			
58,684	Shaver, A. G	New Haven, Conn	Eraser and burnisher	Oct. 9, 1866.
60,644	Shaw, B. D	Beverly, Ohio	Latches, gate and door	Dec. 18, 1866.
	Shaw, Daniel	Elkhart, Ind	Mill, smut and grain separator (Extension)	Apr. 5, 1866.
57,392	Shaw, Elijah	Milwaukee, Wis	Leather, machine for clamping and stretching	Aug. 21, 1866.
56,107	Shaw, George E	Pittsburg, Pa	Oil, carbon fire tester	July 3, 1866.
54,419	Shaw, Henry F	West Roxbury, Mass	Hoisting apparatus	May 1, 1866.
	Shaw, Hiram M., and Luther Gibbs. (*See* Gibbs & Shaw.)			
57,980	Shaw, Jacob	Hinckley, Ohio	Metal, sheet, machine for forming lock joints in. (Antedated September 2, 1866.)	Sept. 11, 1866.
57,779	Shaw, John L	Fort Wayne, Ind	Railway crossing	Sept. 4, 1866.
58,954	Shaw, Samuel J., assignor through mesne assignments to self and Thomas Corey.	Marlboro', Mass	Brace, eyeleting	Oct. 16, 1866.
58,955	Shaw, Samuel J., and W. E. C. Worcester, assignors through mesne assignments to Samuel J. Shaw and Thomas Corey.	....do	Brace and lacing device	Oct. 16, 1866.
52,455	Shaw, Thomas	Philadelphia, Pa	Rod joint, connecting	Feb. 6, 1866.
52,894	Same	....do	Hammers, power	Feb. 27, 1866.
56,108	Same	....do	Quartz crushers	July 3, 1866.
2,398	Shaw, Thomas, assignor to Philip S. Justice	....do	Hammers, power (Reissue)	Nov. 27, 1866.
59,864	Shaw, William	New Gordon, Ohio	Mills, cider	Nov. 20, 1866.
2,219	Shaw, W. Anthony	New York, N. Y	Pipes with tin, mode of lining (Reissue)	Apr. 3, 1866.
56,622	Same	....do	Pipe-lead, tin-lined	July 24, 1866.
52,003	Shaw, W. Anthony, assignor to self, G. Willard, and L. and J. Colwell.	....do	Shot, device for separating	Jan. 9, 1866.
58,557	Shawcross, T. T., assignor to self, L. D. Wyatt, and E. D. McManama.	Allisonville, Ind	Planter, corn	Oct. 2, 1866.
57,981	Shawk, G. W. S. C. Morley, and L. D. Cushman	Cleveland, Ohio ....do New Lisbon, Ohio	Telegraphic fire alarms	Sept. 11, 1866.
54,420	Shaeffer, John W., assignor to Alonzo Sherman and Charles Diller.	Sterling, Ill	Pumps	May 1, 1866.
54,027	Shearman, John F	Brooklyn, N. Y	Shells, explosive, percussion fuse for	Apr. 17, 1866.
54,968	Same	Brooklyn, N. Y	Engines, steam, slide valve for	May 22, 1866.
56,807	Same	....do	Metals, method of compressing, condensing, and extending	July 31, 1866.
56,109	Shedd, J. Herbert, and Benjamin Worcester	Waltham, Mass	Chimney cap	July 3, 1866.
52,895	Shedlock, William and Alfred, and George Marshall	Brooklyn, E. D., N. Y	Valves, stop	Feb. 27, 1866.
	Sheets, Daniel, *et al.* (*See* Donaldson, Sheets & Miller.)			
	Sheetz, C. A., and J. B. Byerly. (*See* Illingworth, B., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,421	Sheffer, A. H	West Donegal Township, Pa.	Harrow and cultivator combined	May 1, 1866.
53,928	Sheffield, E. H., and E. P. Palmer, assignors to E. H. Weston	Stonington Conn. / New York, N. Y.	Boats from davits, device for detaching	Apr. 10, 1866.
57,780	Sheffield, G. V., and J. F. Coburn	Hopkinton, Mass.	Leather, machine for piercing	Sept. 4, 1866.
	Sheldon, F. A., and C. O. Greene. (*See* Hyde, James R., ass'r.)			
53,690	Sheldon, George T	Chelmsford, Mass.	Pipe, flanged moulds for casting	Apr. 3, 1866.
54,422	Sheldon, P. B	Prattsburg, N. Y.	Fruit baskets. (Antedated April 21, 1866)	May 1, 1866.
55,430	Sheldon, Thomas, assignor to self, H. Inman, and E. P. Furlong	Enfield, Conn.	Jack, lifting	June 5, 1866.
53,494	Sheldrake, Charles C., and Joseph Bready	Philadelphia, Pa.	Soda-water apparatus	Mar. 27, 1866.
57,585	Shellenberger, John	Hampshire, Ill.	Sewing machines, shuttle-carriers for	Aug. 28, 1866.
60,576	Shelton, W. B	Congruity, Pa.	Fenees	Dec. 18, 1866.
53,495	Shentor, Francis	Slatington, Pa.	Slate frames	Mar. 27, 1866.
60,577	Shepard, Allen	Ashland, Mass.	Lamp shades	Dec. 18, 1866.
56,623	Shepard, Calvin	Kattelville, N. Y.	Well tubes, driving	July 24, 1866.
	Shepard, David, and John and Edwin E. Nichols. (*See* Nichols & Shepard.)			
	Shepard, J., *et al.* (*See* Sigourney, Robinson & Shepard.)			
54,223	Shepard, James	Bristol, Conn.	Meat and vegetable cutter	Apr. 24, 1866.
54,614	Shepard, James, and B. B. Lewis	....do	Fruit boxes	May 8, 1866.
	Shepard, J. D. (*See* Heneage, Robert, assignor.)			
53,050	Shepard, Levi	Gold Hill, Nevada	Scales for weighing	Mar. 6, 1866.
56,457	Shepard, S., and A. M. George	Nashua, N. H.	Paper, enameled, machine for polishing	July 17, 1866.
	Sheppard, J. A. (*See* Martins, Beesley and Currie, ass'rs.) Design.			
51,871	Sheppard, Thomas M	Chicago, Ill.	Sieve	Jan. 2, 1866.
60,578	Sherburne, N. H., and J. T. Whipple	Elgin, Ill. / Chicago, Ill.	Well tubing	Dec. 18, 1866.
56,808	Sherlock, George A	Boston, Mass.	Locks	July 31, 1866.
56,624	Sherman, Albert R	Natick, R. I.	Lubricating journal boxes, mode of	July 24, 1866.
	Sherman, Alonzo, and Charles Diller. (*See* Shaeffer, John W., assignor.)			
	Sherman, E., and J. L. Hubbell. (*See* Hubbell & Sherman.)			
57,393	Sherman, E. F	Chicopee Falls, Mass.	Corn shellers	Aug. 21, 1866.
55,724	Sherman, Jacob A	New York, N. Y.	Trusses	June 19, 1866.
52,004	Sherman, Joseph, assignor to self and John T. Severns	Burlington, N. J.	Shingle	Jan. 9, 1866.
	Sherman, J. Edwin. (*See* Stainford, William E., assignor.)			
53,892	Sherman, Peleg A., and Freeman Baxter	Pawtucket, R. I.	Looms, means of operating the picker staff of	Apr. 10, 1866.
53,051	Sherman, Samuel and Jeremiah	McHenry, Ill.	Harvester rakes	Mar. 6, 1866.
53,893	Sherman, Samuel S. and Jeremiah G	....do	Broom head	Apr. 10, 1866.
57,586	Sherman, Simeon	Weston, Mo.	Stone, machine for sawing	Aug. 28, 1866.
58,309	Same	....do	Water wheels	Sept. 4, 1866.
58,685	Same	....do	Steam generators	Oct. 9, 1866.
58,900	Same	....do	Engines, rotary	Oct. 16, 1866.
2,208	Sherman, Sylvester J	Brooklyn, N. Y.	Dresses, ladies', springs for (Reissue)	Mar. 20, 1866.
53,691	Same	....do	Skirts, skeleton	Apr. 3, 1866.
60,579	Same	....do	Belt fastenings	Dec. 18, 1866.

60,071	Sherman, William C	Boston, Mass	Carriage thills, attaching	Nov. 27, 1866.
52,329	Sherwood, A. S	Detroit, Mich	Lightning rods	Jan. 30, 1866.
59,466	Sherwood, Calvin W	Chicago, Ill	Desk and seat, school	Nov. 6, 1866.
55,372	Sherwood, N. B	Millville, N. Y	Planters, cotton-seed	June 5, 1866.
55,373	Same	do	Planters, cotton-seed	June 5, 1866.
54,616	Sherwood, Samuel	New York, N. Y	Harness, blacking for	May 8, 1866.
52,213	Sherwood, Thomas N	Dunlapsville, Ind	Cultivators	Jan. 23, 1866.
57,982	Sherwood, W. C	Buffalo, N. Y	Wells, oil, method of removing obstructions from	Sept. 9, 1866.
60,645	Shew, James N	Paper Mills, Md	Paper making, rag, engines for	Dec. 18, 1866.
54,785	Shifield, Permelia E	Pontiac, Mich	Skirts, hoop	May 15, 1866.
	Shiland, A., *et al.* (*See* Lyon, Ransom, assignor.)			
55,374	Shinn, Francis	Rockford, Ill	Horseshoes	June 5, 1866.
56,280	Shinneller, Jacob, and John Brislin	Temperanceville, Pa	Horseshoe machine	July 10, 1866.
53,381	Shipley, Amos, assignor to W. T, and I. Merserean	Newark, N. J	Stair rod	Mar. 20, 1866.
57,446	Shipman, George, assignor to Azel Howard	West Bridgewater, Mass	Eyeleting machines	Aug. 21, 1866.
58,963	Shipton, James Alfred, and Robert Mitchell	England	Pipe joints and other similar articles, machinery for forging	Oct. 16, 1866.
2,374	Shirrill, David	Buffalo, N. Y	Trade mark (Design)	July 24, 1866.
52,896	Shive, David	Philadelphia, Pa	Photographic printing frame	Feb. 27, 1866.
2,198	Same	do	Photographs, instruments for enlarging (Reissue)	Mar. 13, 1866.
54,423	Same	do	Engine, steam governors	May 1, 1866.
56,279	Shiveley, J. W	New York, N. Y	Railroad rails	July, 10, 1866.
	Shiverick, Benjamin, and Nathaniel L. Sibley. (*See* Sibley & Shiverick.)			
	Shober, Emanuel. (*See* Stocker, Edward, assignor.)			
55,375	Shoemaker, Charles T	Philadelphia, Pa	Saws	June 5, 1866.
56,110	Shoemaker, W. S	Greenwood, Md	Washing and wringing machines	July 3, 1866.
	Sholes, C. Latham, and C. F. J. Moller. (*See* Moller & Sholes.)			
	Sholes, C. Latham, and Samuel W. Soulé. (*See* Soulé & Sholes.)			
55,544	Sholl, Joseph, and John Collins	Burlington, N. J	Funnels, alarm. (Antedated May 28, 1866)	June 12, 1866.
52,214	Shone, George	Carondelet, Mo	Pipe couplings	Jan. 23, 1866.
54,969	Shone, John	Blackwoodtown, N. J	Ventilating grain, mode of	May 22, 1866.
51,872	Shopbell. Elias	Ashland, Ohio	Tire wagon, machine for upsetting	Jan. 2, 1866.
55,170	Same	do	Carpet holder	May 29, 1866.
	Shore, Samuel, *et al.* (*See* Turner, Shore & Halliwell.)			
57,199	Shorkley, E	Lewisburg, Pa	Hay forks, horse	Aug. 14, 1866.
56,809	Short, Abraham and David	West Liberty, Ohio	Lounges	July 31, 1866.
52,330	Short, John E	New Richmond, Ohio	Broom head	Jan. 30, 1866.
52,250	Short, Joseph, assignor to self, John J. Eckel, and Isaac S. Schuyler.	New York, N. Y	Bleaching fibrous substances, process for	Jan. 23, 1866.
2,217	Short, Joseph, assignor to J. J. Eckel, and Isaac S. Schuyler	do	Bleaching fibrous substances, process for (Reissue)	Apr. 3, 1866.
59,782	Shonpe, William	Saltsburg, Pa	Wells, apparatus for obtaining oil from	Nov. 20, 1866.
53,191	Shreffler, Samuel	Joliet, Ill	Brick moulds	Mar. 13, 1866.
54,617	Shrinkle, Oliver P	Covington, Ky	Glass blowers' moulds	May 8, 1866.
55,376	Shryock, John T	Zanesville, Ohio	Brick-drying press	June 5, 1866.
58,686	Shuck, Samuel	Bedford, Pa	Cigarettes, manufacture of	Oct. 9, 1866.
58,490	Shults, A. G. and P. M	Avoca, N. Y	Drawers, money	Oct. 2, 1866.
55,725	Shultz, Levi	Upper Sandusky, Ohio	Mills, fanning	June 19, 1866.
	Shumway, S., and W. H. Tillon. (*See* Tillon & Shumway.)			
	Shurler, J. C., and Company. (*See* Arnold, S. D., assignor.)			
	Design.			
	Same.			
	Same.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Shurler, J. C., and Company. (*See* Arnold, S. D., assignor.)			
	Design.			
	Same.			
	Same.			
	Same.			
51,875	Shurr, F., and John Palmer	Milwaukee, Wis	Churns	Jan. 2, 1866.
60,580	Shurtleff, Asahel M., assignor to self, B. S. Codman, and F. O. Whitney.	Boston, Mass	Atomizing tubes	Dec. 18, 1866.
55,431	Shurtleff, William H., assignor to self and Henry A. Church	Providence, R. I	Hook and button, combined	June 5, 1866.
	Shutts, W. H., *et al.* (*See* Smith, John P., assignor.)			
57,781	Sibbett, John W	Cincinnati, Ohio	Bolt heading machines, dies for	Sept. 4, 1866.
53,894	Sibley, Nathaniel L., and Benjamin Shiverick	Waltham, Mass. / Weston, Mass.	Furnaces, puddling and other, doors for	Apr. 10, 1866.
57,983	Sibley, T. P	Oberlin, Ohio	Shed and rack, sheep, combined	Sept. 11, 1866.
53,236	Sibley, William E., assignor to Nathaniel L. Sibley	Weston, Mass	Gearing for grinding and other rollers	Mar. 13, 1866.
58,735	Sickles, Gerard, assignor to self, J. W. Preston, and R. S. Lewis	Boston, Mass	Water meters	Oct. 9, 1866.
58,144	Sidle, Henry	Minneapolis, Minn	Washing machine	Sept. 18, 1866.
59,929	Same	....do	Houses, construction of	Nov. 20, 1866.
57,982	Sigerfoos, George W., Joseph J. Sands, and George Fry	Potsdam, Ohio	Gates	Sept. 4, 1866.
	Sigley, William B. (*See* Miles, Oren E., assignor.)			
60,581	Sigourney, J., A. T. Robinson, and J. Shepard, assignors to J. Sigourney, A. F. Robinson, and B. B. Lewis.	Bristol, Conn	Stove hooks, &c., hanger for	Dec. 18, 1866.
	Sigwalt, John, jr., and Joseph W. Griswold. (*See* Griswold & Sigwalt.)			
	Sigwalt, John, jr., and Daniel Stoner. (*See* Stoner & Sigwalt.)			
52,215	Silkman, John H	Milwaukee, Wis	Splitting machines, wood	Jan. 23, 1866.
52,216	Same	....do	Splitting machines, wood, axes for	Jan. 23, 1866.
	Silver, A. R. (*See* Dole, L. A., assignor.)			
	Silver Skirt and Wire Manufacturing Company. (*See* Sleppy, T. S., assignor.) Reissue.			
58,491	Silver, Thomas	New York, N. Y	Engines, steam, governors for	Oct. 2, 1866.
55,726	Simeon, Felix John	Brooklyn, N. Y	Feed bags	June 19, 1866.
55,377	Simkins, Lebbeus	....do	Pumps, ships', means for working	June 5, 1866.
	Simmerman, Jacob S., and William L. Newell. (*See* Newell & Simmerman.)			
53,087	Simmonds, Joseph, assignor to self and Samuel G. Law	....do	Steam blowers	Mar. 6, 1866.
	Simmons, Adolphus J., and Edward A. Palmer. (*See* Palmer & Simmons.)			
52,613	Simmons, Michael	Howardsville, Ill	Roof	Feb. 13, 1866.
55,919	Simmons, P. P	Davenport, Iowa	Slats, window-shade, machines for cutting	June 26, 1866.
53,895	Simmons, Thomas	Chicago, Ill	Rectifying apparatus	Apr. 10, 1866.
59,467	Same	....do	Filters	Nov. 6, 1866.
54,652	Simonds, Abel, assignor to self, B. Snow, jr., Alvin A. and George F. Simonds.	Fitchburg, Mass	Mowing machine guards, manufacture of	May 8, 1866.
55,171	Simonds, Amos B	Youngstown, Ohio	Screw-cutting machine	May 29, 1866.

56,281	Simonds, George W	Lynnfield, Mass	Axes on their handles, mode of securing	July 10, 1866.
54,424	Simonds, Warren A	Boston, Mass	Fluid regulator	May 1, 1866.
	Simons, Jackson. (*See* Tyler & Tattershall, assignors.)			
	Simons, Oscar A., and Eugene Fontaine. (*See* Fontaine & Simons.)			
54,224	Simonson, Gibson	Mount Carmel, Ind	Ploughs, steam	Apr. 24, 1866.
58,901	Simpson, Edwin L	Bridgeport, Conn	Dental purposes, rubber for	Oct. 16, 1866.
58,902	Same	...do	Rubber, India, gutta percha, &c., manufacture of	Oct. 16, 1866.
55,378	Simpson, George	Waterbury, Vt	Alarm, burglar	June 5, 1866.
52,456	Simpson, George B	Washington, D. C	Amalgamating gold and silver	Feb. 6, 1866.
54,028	Same	...do	Amalgamator	Apr. 17, 1866.
57,394	Same	...do	Ores, apparatus for reducing	Aug. 21, 1866.
	Simpson, George W., and William H. Robertson. (*See* Robertson & Simpson.)			
55,020	Simpson, Robert, assignor to Joseph Pratt and Charles C. Wentworth.	Boston, Mass	Stove doors	May 22, 1866.
2,220	Simpson, S. L	New York, N. Y	Rulers (Reissue)	Apr. 3, 1866.
	Simpson, Thomas, and Cyrus W. Saladee. (*See* Saladee & Simpson.)			
57,984	Simpson, William, Z. Oman, and S. Foreman	Nottawa, Mich	Lathes, turning	Sept. 11, 1866.
	Simpson, William P. (*See* Whittaker, Thomas, assignor.)			
	Sims, Elbridge. (*See* Collins, D. L., assignor.)			
	Sims, Elbridge. (*See* Brown, N. B., assignor.)			
59,085	Sinclair, James P	Millport, N. Y	Hitching clamp or hold-fast	Oct. 24, 1866.
2,216	Sinclaire, Thomas R	New York, N. Y	Cars, railway, street, method of starting (Reissue)	Mar. 27, 1866.
56,810	Same	...do	Car starter and brake	July 31, 1866.
	Siner, William H., *et al.* (*See* Ferrall, James M., assignor.)			
	Singer, C. W., and J. Johnson. (*See* Johnson & Singer.)			
58,956	Singer, C. W., assignor to self and Abel Land	Anderson Store, Va	Car brake	Oct. 16, 1866.
	Singer, Isaac A. (*See* Barnes, Joshua, assignor.)			
60,433	Singer, Isaac Merritt	Yonkers, N. Y	Sewing machine	Dec. 11, 1866.
58,145	Sinott, Thomas, and / James McIntyre	Brooklyn, N. Y. / New York, N. Y.	Tuyeres	Sept. 18, 1866.
53,692	Sirret, Emile	Buffalo, N. Y	Faucets, beer	Apr. 3, 1866.
53,382	Sisco, Henry C., assignor to self and Osgood & Smith	Indianapolis, Ind	Lathes for turning wagon hubs	Mar. 20, 1866.
2,199	Sisson, Henry T	Providence, R. I	Portfolio (Reissue)	May 15, 1866.
	Sisson, N. E., *et al.* (*See* McDonald, Donald, assignor.)			
	Sisson, Noel E., *et al.* (*See* McDonald, William, assignor.)			
55,590	Sisson, Robert E., assignor to C. H. Moore and A. Sisson	Wickford, R. I	Photographic baths	June 12, 1866.
	Skaats, George W. (*See* Story, Ira C., assignor.) Reissue.			
57,985	Skeels, Err and Dwight	Springwater, N. Y	Rack, sheep	Sept. 11, 1866.
52,506	Skeels, Levi	Worthington, Ohio	Spinning machines, flax	Feb. 6, 1866.
54,425	Skiff, Albert S	Trenton Falls, N. Y	Rollers, land	May 1, 1866.
	Skinner, Edgar B. (*See* Deyo, Calvin B., assignor.)			
59,086	Skinner, Edward M	Boston, Mass	Medicine chests	Oct. 23, 1866.
55,379	Skinner, E. W	Madison, Wis	Mills, sugar-cane. (Antedated December 5, 1865)	June 5, 1866.
52,758	Skinner, Halcyon	Yonkers, N. Y	Spelling, apparatus for teaching	Feb. 20, 1866.
52,217	Skinner, James B	Rockford, Ill	Cultivators	Jan. 23, 1866.
54,029	Same	...do	Ploughs, gang	Apr. 17, 1866.
57,200	Same	...do	Ploughs	Aug. 14, 1866.
57,986	Slaight, Thomas	Newark, N. J	Lock for doors of baggage cars	Sept. 11, 1866
59,666	Slater, Erastus	Girard, Pa	Ladder, extension, fruit	Nov. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
57,000	Slawson, J. B	New Orleans, La	Fare boxes	Aug. 7, 1866.
59,138	Slayton, Phineas L., and Charles T. Kane, assignors to Almet Reed.	New York, N. Y	Looms, circular, for weaving hats	Oct. 23, 1866.
52,897	Slemmer, Henry T	Norristown, Pa	Oil lubricating, manufacture of	Feb. 27, 1866.
54,970	Sleppy, S. P	Wilkesbarre, Pa	Legs, artificial	May 22, 1866.
55,920	Slevin, James Joseph	New York, N. Y	Box, garbage	June 26, 1866.
57,642	Sloan, John, assignor to self and John W. Jones	Philadelphia, Pa	Larder, ventilated	Aug. 28, 1866.
	Sloan, John, and James Kee. (*See* Kee & Sloan.)			
52,898	Sloan, Thomas J	New York, N. Y	Boiler feeders, automatic	Feb. 27, 1866.
57,201	Same	do	Braiding machines	Aug. 14, 1866.
2,182	Sloan, Thomas J., assignor to the American Screw Company	do	Screws, machines for shaving and nicking	(Reissue) Mar. 6, 1866.
54,260	Sloan, Thomas J., assignor to John G. Sloan	do	Mills, grinding	Apr. 24, 1866.
54,261	Same	do	Mills, grinding	Apr. 24, 1866.
54,262	Same	do	Mills, grinding	Apr. 24, 1866.
	Sloane, William M., *et al.* (*See* Rowley, Sloane & Woodruff.)			
60,268	Slusser, Benjamin	Sidney, Ohio	Excavator	Dec. 4, 1866.
54,618	Slusser, Joseph	Cincinnati, Ohio	Hinges, shutter	May 8, 1866.
	Slyter, Frelon H., and Orrin R. Clark. (*See* Clark & Slyter.)			
55,727	Small, Henry C	Portland, Maine	Cattle tie	June 26, 1866.
59,087	Small, John E	Berlin, Wis	Crib and chair	Oct. 23, 1866.
	Smead, Franklin. (*See* Enos, John M., assignor.)			
60,072	Smiley, Francis P., Charles K. Beecher, and Isaac Townsend	Philadelphia, Pa	Rattle, policeman's	Nov. 27, 1866.
	Smith & Griggs. (*See* Griggs, Henry C., assignor.)			
	Smith and Sayre Manufacturing Company. (*See* McKenzie & Isbell, assignors.)			
57,001	Smith, A. and G	Flint, Ind	Smut machines. (Antedated August 2, 1866)	Aug. 7, 1866.
57,587	Smith, A. G	Jersey City, N. J	Lamps	Aug. 28, 1866.
59,865	Same	do	Lanterns	Nov. 20, 1866.
51,874	Smith, Aaron W	Manchester, N. H	Bit stocks	Jan. 2, 1866.
52,650	Smith, Addison, assignor to self, David M. Mefford, and Giles Boalt.	Perrysburg, Ohio	Preservatory	Feb. 13, 1866.
58,492	Smith, Alba F	Norwich, Conn	Bridges, draw, railroad, signal for	Oct. 2, 1866.
58,311	Smith, Albert M	Brooklyn, N. Y	Buttons. (Antedated September 17, 1866)	Sept. 25, 1866.
57,987	Smith, Alfred E	Bronxville, N. Y	Wagons, axle boxes for	Sept. 11, 1866.
60,582	Smith, Alonzo N	Hallowell, Maine	Shoulder braces	Dec. 18, 1866.
52,899	Smith, Amor	Cincinnati, Ohio	Press plates	Feb. 27, 1866.
	Smith, A. J. (*See* Wait, G. W., assignor.)			
55,172	Smith, Andrew J	Greenville, Ohio	Steam generators	May 29, 1866.
52,759	Smith, A. J., and G. S. Hudson	Ellisville, N. Y	Farm gates	Feb. 20, 1866.
56,282	Smith, A. P	Sterling, Ill	Window blinds	July 10, 1866.
60,073	Smith, A. R	Delaware, Ohio	Bolts, flour	Nov. 27, 1866.
	Smith, A. T. (*See* Messenger, A. C., assignor.)			
54,619	Smith, Benjamin M	Brooklyn, N. Y	Cotton, teeth of machines for picking	May 8, 1866.
	Smith, C., *et al.* (*See* Hatch, Jonathan, assignor.)			
	Smith, Charles B. (*See* Wright, Lysander, assignor.) Reissue.			

60,269	Smith, Charles B., assignor to Wright & Smith	Newark, N. J	Pulley, friction	Dec. 4, 1866.
54,426	Smith, C. D	Chicago, Ill	Composition for painting metallic roofs	May 1, 1866.
52,614	Smith, Charles D	Washington, D. C	Eyelets	Feb. 13, 1866.
57,202	Same	....do	Button holes	Aug. 14, 1866.
58,588	Smith, Charles D., assignor to self and John A Wiedersheim	....do	Eraser and pencil sharpener, combined	Oct. 2, 1866.
	Smith, C. D., and R. N. Eagle. (*See* Eagle and Smith.)			
57,783	Smith, Charles G	Chelsea, Mass	Metal tubes, machine for making	Sept. 4, 1866.
58,903	Smith, Charles Thomas	Utica, N. Y	Spinning machines, bobbins for	Oct. 16, 1866.
53,192	Smith, Chester F	Litchfield, Conn	Butter workers	Mar. 13, 1866.
54,030	Same	....do	Digger, stone and root	Apr. 17, 1866.
	Smith, D., *et al.* (*See* White, Luther C., assignor.)			
60,074	Smith, Dexter	Springfield, Mass	Cartridge machine	Nov. 27, 1866.
58,687	Smith, D. M	Springfield, Vt	Paper holder	Oct. 9, 1866.
56,811	Smith, Earle A. and Dwight M	Waterbury, Conn	Buckle	July 31, 1866.
60,075	Smith, E. C	Birmingham, Conn	Poles, draft to carriages, attaching	Nov. 27, 1866.
53,353	Smith, Earle Harry	Sherwood, N. J	Sewing machines. (Antedated September 20, 1865)	Mar. 20, 1866.
59,088	Same	Bergen, N. J	Sewing machine shuttles. (Antedated October 7, 1866)	Oct. 23, 1866.
59,142	Smith, Edgar M., assignor to Mitchell, Vance & Co	New York, N. Y	Carburetters, feeders for	Oct. 23, 1866.
57,395	Smith, Edmund, jr., and Alonzo Chase	Worcester, Mass	Bed bottom	Aug. 21, 1866.
52,218	Smith, Eli	Windsor, Vt	Saw set	Jan. 23, 1866.
55,380	Smith, Ephraim	Clinton, Pa	Harvesters, rake attachment to	June 5, 1866.
	Smith, E. M. and S. B. H. Vance. (*See* Vance & Smith.)			
58,146	Smith, Francis H	Baltimore, Md	Brick kilns	Sept. 18, 1866.
60,270	Smith, Francis M., and Edwin Brumfield	Albion, N. Y	Rakes, horse	Dec. 4, 1866.
60,583	Smith, Francis W	Philadelphia, Pa	Teeth, artificial	Dec. 18, 1866.
52,900	Smith, Frederick	Allegheny, Pa	Lathes for turning ovals	Feb. 27, 1866.
60,434	Smith, Frederick H	Baltimore, Md	Bridges	Dec. 11, 1866.
	Smith, Gaston D., *et al.* (*See* Frey, Allen & Smith.)			
52,083	Smith, George	Omaha City, N. T	Cultivators, hand	Jan. 16, 1866.
56,812	Smith, George	Brooklyn, N. Y	Coal scuttle	July 31, 1866.
	Smith, George, *et al.* (*See* Thomson, Smith & Jennings.)			
2,252	Smith, G and H. Brown, assignors to Abbott & Noble	Philadelphia, Pa	Stove, cook. (Antedated December 27, 1865) (Design)	Jan. 30, 1866.
2,253	Same	....do	Stove, cook. (Antedated December 27, 1865) (Design)	Jan. 30, 1866.
2,270	Same	....do	Stove, plates of a. (Antedated January 30, 1866) (Design)	Feb. 27, 1866.
2,271	Same	....do	Stove, plates of a. (Antedated January 30, 1866) (Design)	Feb. 27, 1866.
2,272	Same	....do	Stove, cook, plates of a. (Antedated Jan. 30, 1866) (Design)	Feb. 27, 1866.
2,287	Same	....do	Stove, cook, plates of a. (Antedated Feb. 27, 1866) (Design)	Mar. 27, 1866.
2,379	Same	....do	Stove, plates of a. (Antedated July 10, 1866) (Design)	Aug. 7, 1866.
2,333	Smith, George Hand	Rochester, N. Y	Steel direct from the ore, process of making. (Division A, reissue.)	Aug. 14, 1866.
2,334	Same	....do	Steel direct from the ore, process of making. (Division B, reissue.)	Aug. 14, 1866.
57,396	Smith, George L	Brooklyn, N. Y	Grate	Aug. 21, 1866.
60,271	Smith, George Y	Plainfield, N. J	Rack, hay, for wagons	Dec. 4, 1866.
	Smith, Gerret, *et al.* (*See* Jahne, Henry, assignor.)			
	Smith, Gilbert A., *et al.* (*See* Collins, Richard, assignor.)			
60,584	Smith, G. Truman and William E. Sparks	New Haven, Conn	Fastener, blind	Dec. 18, 1866.
52,219	Smith, H. B	Lowell, Mass	Tenoning machine	Jan. 23, 1866.
55,381	Smith, H. B	Eureka, Ill	Cultivators	June 5, 1866.
51,875	Smith, H. C	Ridge Farm, Ill	Ploughs, gang	Jan. 2, 1866.
	Smith, H. D. and G. F. (*See* Thorp, James P., assignor.)			
51,976	Smith, Hamilton E	Cincinnati, Ohio	Stove, cook, gas or petroleum, portable	Jan. 9, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,515	Smith, Hamilton E	Cincinnati, Ohio	Clothes wringers, rolls for	Feb. 13, 1866.
60,076	Smith, H. L	Gambier, Ohio	Oils, &c., treating	Nov. 27, 1866.
52,901	Smith, Hamilton L	....do	Microscopes	Feb. 27, 1866.
60,585	Same	....do	Hydro-carbons, refining	Dec. 18, 1866.
52,331	Smith, Harrison N. M	Philadelphia, Pa	Skate	Jan. 30, 1866.
56,283	Smith, Hector Craig	Dublin, Ind	Harness for horses	July 10, 1866.
52,332	Smith, Henry	Salem, Mass	Window blinds, operating	Jan. 30, 1866.
52,333	Same	....do	Window sash, mode of operating	Jan. 30, 1866.
52,334	Same	....do	Movement, mechanical	Jan. 30, 1866.
59,667	Smith, Henry, deceased, by Giles K. Coates, administrator	....do	Doors, mechanism for closing	Nov. 13, 1866.
59,668	Same	....do	Clock escapements, equalizing springs for	Nov. 13, 1866.
56,458	Smith, Henry, and Hiram F. Snow	Dover, N. H	Beverage	July 17, 1866.
	Smith, Henry C	Cleveland, Ohio	Lathe machines (Extension)	Sept. 27, 1866.
54,620	Smith, Henry G., and E. Minor Pomeroy	West Meriden, Conn	Plated ware, fastening handles to	May 8, 1866.
54,225	Smith, Hiram Moore	Richmond, Va	Water elevators	Apr. 24, 1866.
55,173	Same	....do	Tobacco, smoking, machine for cutting	May 29, 1866.
	Smith, Hobart H. (*See* Lufkin, C. M., assignor.) Reissue.			
	Same.			
	Same.			
	Same.			
	Same			
	Smith, Howell. (*See* Devines, William, assignor.)			
56,329	Smith, Isaac, assignor to self, and W. H. Haight	New York, N. Y	Chucks	July 10, 1866.
56,330	Same	....do	Chucks	July 10, 1866.
56,284	Smith, Isaac, and W. D. Tewksbury	....do	Hose nozzle, revolving	July 10, 1866.
53,052	Smith, Israel E	York, Pa	Washing machine	Mar. 6, 1866.
	Smith, Jacob. (*See* Pettigrew, David L., assignor.)			
57,002	Smith, J. B	Dunmore, Pa	Coal screen	Aug. 7, 1866.
	Smith, Jacob S., *et al.* (*See* Rucker, Allen, & Smith.)			
	Smith, James. (*See* Scott & Smith, assignors.)			
59,866	Smith, James A	New York, N. Y	Tool	Nov. 20, 1866.
52,933	Smith, James D., assignor to Oliver S. Winchester	Bridgeport, Conn	Fire-arms, magazine	Feb. 27, 1866.
52,934	Same	....do	Fire-arms, magazine	Feb. 27, 1866.
57,003	Smith, J. G	Battle Creek, Mich	Bed bottom	Aug. 7, 1866.
56,459	Smith, J. H	Pinesville, Pa	Augers, hollow	July 17, 1866.
53,693	Smith, James L	Tuscola, Ill	Filters, sirup	Apr. 3, 1866.
54,971	Smith, J. Lawrence	Louisville, Ky	Burners, gas	May 22, 1866.
55,382	Smith, James M	Seymour, Conn	Augers, hollow	June 5, 1866.
56,813	Smith, John A	Wapuca, Wis	Weather strips for doors	July 31, 1866.
60,272	Smith, John E	Buffalo, N. Y	Bungs, machine for cutting. (Antedated November 16, 1866)	Dec. 4, 1866.
53,694	Smith, John P	Hudson, N. Y	Threshing machines	Apr. 3, 1866.
60,273	Same	....do	Digger, potato. (Antedated November 22, 1866)	Dec. 4, 1866.
56,331	Smith, John P., assignor to self, John B. Longley, and W. H. Shutts	....do	Hay, machines for raking and loading	July 10, 1866.
53,496	Smith, John T	Middletown, Conn	Tool, milling	Mar. 27, 1866.
	Smith, John W., and George Scott. (*See* Scott & Smith.)			

52,370	Smith, John W., assignor to self, M. Prince, J. Buchrach, and L. Hildelberger.	Iowa Point, Kansas	Cartridges for fire-arms	Jan. 30, 1866.
54,226	Smith, John Y., assignor to self and H. Haupt	Alexandria, Va	Drill, rock	Apr. 24, 1866.
54,786	Same	do	Metallic bars, triple-ribbed	May 15, 1866.
55,921	Smith, Joseph D	Peoria, Ill	Ploughs, gang	June 26, 1866.
59,283	Same	do	Seeding machines	Oct. 30, 1866.
52,084	Smith, Joseph Nottingham	Jersey City, N. Y	Press, hay and cotton	Jan. 16, 1866.
59,669	Same	do	Press, foot	Nov. 13, 1866.
59,670	Same	do	Hydrants	Nov. 13, 1866.
59,671	Same	do	Hydrants	Nov. 13, 1866.
59,672	Same	do	Faucets	Nov. 13, 1866.
55,021	Smith, Lewis, assignor to self and George T. Ryder	Foxboro, Mass	Beds, springs for	May 22, 1866.
56,151	Smith, Lewis A., assignor to self and George Burrows	Cincinnati, Ohio	Varnish, shellac	July 3, 1866.
56,111	Smith, Luther	Rochester, Minn	Jack, lifting	July 3, 1866.
	Smith, L. W., and A. Frazee. (*See* Frazee & Smith.)			
	Smith, Major, and Fordyce Beals. (*See* Beals & Smith.)			
54,787	Smith, Marshall	St. Louis, Mo	Mail pouch or box	May 15, 1866.
56,285	Smith, Mathias	Lake, Ill	Street scraper	July 10, 1866.
58,736	Smith, M. G., and William P. Stevens, assignors to M. G. Smith	Kingston, Pa	Car, dumping, for coal mines	Oct. 9, 1866.
57,203	Smith, Morris H	Brooklyn, N. Y	Pork, mode of curing. (Antedated August 8, 1866)	Aug. 14, 1866.
	Smith, M. L., and G. B. Woodward. (*See* Woodward & Smith.)			
59,468	Smith, M. T	Keeler, Mich	Ploughs	Nov. 6, 1866.
54,427	Smith, O	Chicago, Ill	Ranges, cooking	May 1, 1866.
59,673	Smith, Othniel J	Wauwatosa, Wis	Bolt cutter	Nov. 13, 1866.
54,972	Smith, Peter J	Philadelphia, Pa	Movement, mechanical	May 22, 1866.
56,814	Smith, Rees B	Mount Pleasant, Ohio	Paint	July 31, 1866.
56,815	Same	do	Composition for welding and brazing	July 31, 1866.
56,817	Same	do	Composition for facing moulds	July 31, 1866.
56,818	Same	do	Roofing, composition for	July 31, 1866.
	Smith, R. D. O., and W. C. Dodge. (*See* Dodge & Smith.)			
59,089	Smith, R. T	Nashua, N. H	Motive power, transmitting	Oct. 22, 1866.
59,783	Smith, Roswell T	do	Fans, apparatus for binding circular, paper, or other	Nov. 20, 1866.
59,869	Same	do	Fans, paper, machines for folding	Nov. 20, 1866.
57,004	Smith, Ruel	Bangor, Maine	Eraser	Aug. 7, 1866.
55,728	Smith, Samuel	Philadelphia, Pa	Stoves, heating	June 26, 1866.
58,493	Same	do	Stoves, cooking	Oct. 2, 1866.
57,643	Smith, Scott A., assignor to self, G. V. Cresson, and G. W. Hubbard.	do	Steam generating apparatus	Aug. 28, 1866.
2,240	Smith, Sidney	Greenfield, Mass	Stove, plates of a (Design)	Jan. 2, 1866.
54,031	Same	do	Stoves, heating	Apr. 17, 1866.
56,816	Same	do	Heating apparatus	July 31, 1866.
58,494	Smith, Sterry	Salem, Mass	Grate bar	Oct. 2, 1866.
	Smith, Thomas C., and Charles L. Richards. (*See* Parmelee, Dubois D., assignor.)			
56,112	Smith, T. D	Independence, Iowa	Butter worker and moulds	July 3, 1866.
59,674	Smith, Thomas F	Ohio county, West Va	Mills, grinding	Nov. 13, 1866.
60,077	Smith, T. K	Oskaloosa, Iowa	Churns	Nov. 27, 1866.
59,728	Smith, T. S., assignor to self, S. A. Smith, and Henry Lines	New Haven, Conn	Carriage shackles	Nov. 13, 1866.
52,616	Smith, Uriah	Battle Creek, Mich	Rulers, parallel	Feb. 13, 1866.
	Smith, Warren M. (*See* Webber, C. C., assignor.)			
	Smith, Warren S., *et al.* (*See* Witsil, George L., assignor.)			
51,876	Smith, W. H	New York, N. Y	Burner, petroleum for cooking purposes	Jan. 2, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,383	Smith, Willard H.	New York, N. Y.	Burners, vapor	June 5, 1866.
55,546	Same	do	Lamp burners	June 12, 1866.
52,760	Smith, William C	Lafargeville, N. Y.	Medical compound	Feb. 20, 1866.
55,922	Smith, William G., and Daniel Hooper	New York, N. Y.	Reefing rig, topsail	June 26, 1866.
56,819	Smith, William H.	Sparta, Wis	Bag-holder	July 31, 1866.
57,988	Smith, William P.	Louisville, Ky	Lanterns	Sept. 11, 1866.
57,784	Smith, William S	Noyesville, Ill	Piles, hollow, machine for sinking	Sept. 4, 1866.
	Smith, Willis B., *et al.* (*See* Knowles, Wilson W., assignor.)			
55,729	Smith, Willison G.	Carlisle, Pa.	Spittoons for cars. (Antedated May 26, 1866.)	June 19, 1866.
56,113	Same	do	Spittoon, car	July 3, 1866.
	Smith, W. L., and E. Fox. (*See* Tellgmann, Ferdinand, ass'or.)			
58,311	Smith, W. Morris	Washington, D. C.	Canisters, measuring stopple for	Sept. 25, 1866.
	Smith, W. R. (*See* Hopkins, George M., assignor.)			
52,761	Smith, W. W.	Cincinnati, Ohio	Telegraph insulators	Feb. 20, 1866.
53,246	Same	do	Telegraph insulators	Mar. 13, 1866.
57,785	Smith, Young W.	Bristol, N. Y.	Fruit gatherer	Sept. 4, 1866.
	Smoot, W. S., and H. Stockton. (*See* Stockton & Smoot.)			
54,227	Smyth, Joshua B.	Philadelphia, Pa.	Car spring	Apr. 24, 1866.
	Smyth, W. E. P. (*See* Griffin, Caleb H., assignor.)			
52,220	Smyth, William T.	do	Scrubbing machine	Jan. 23, 1866.
56,625	Snare, John	New York, N. Y.	Fabric, water-proof	July 24, 1866.
	Snediker, W. E., and J. W. Keene. (*See* Keene & Snediker.)			
58,495	Sneider, Edward	Baltimore, Md.	Horseshoes	Oct. 2, 1866.
59,469	Snell, John, jr.	Potterville, Pa.	Hides, machine for handling	Nov. 6, 1866.
59,143	Snook, William G., and O. C. Patchell, assignors to selves and A. H. Gorton.	Corning, N. Y.	Piston packing	Oct. 23, 1866.
57,204	Snover, Theodore F.	Menasha, Wis.	Clothes dryers	Aug. 14, 1866.
58,688	Snow, Amos W.	Norwich, Conn.	Locks	Oct. 9, 1866.
	Snow, B., jr., *et al.* (*See* Simmonds, Abel, assignor.)			
52,457	Snow, George B., and Theodore G. Lewis	Buffalo, N. Y.	Lighter, cigar, gas-jet	Feb. 6, 1866.
59,284	Same	do	Dental plugging instruments	Oct. 30, 1866.
59,784	Same	do	Dental plugging instruments	Nov. 20, 1866.
	Snow, George H., and John M. Marlin. (*See* Greenleaf, Joseph H., assignor.)			
52,371	Snow, George K., assignor to self, March Brothers, Pierce & Co.	Watertown, Mass.	Collar, paper, band	Jan. 30, 1866.
	Snow, Hiram F., and Henry Smith. (*See* Smith & Snow.)			
53,193	Snow, Oliver	Meriden, Conn.	Stair-treads, facing for	Mar. 13, 1866.
60,586	Snow, William B.	Titusville, Pa.	Pumps for deep wells	Dec. 18, 1866.
57,397	Snyder, D. B.	Millville, N. J.	Car coupling	Aug. 21, 1866.
58,904	Snyder, Jacob	Wheeling, West Va.	Furnace, puddling	Oct. 16, 1866.
51,877	Snyder, Jasper	Burlington, Iowa	Printers' galley	Jan. 2, 1866.
60,646	Snyder, Peter A.	Jersey City, N. J.	Mitre, adjustable	Dec. 18, 1866.
53,053	Snyder, William	Wooster, Ohio	Gates, farm	Mar. 6, 1866.
54,032	Same	do	Gates, sliding and swinging	Apr. 17, 1866.
58,312	Soehlmann, Louis	Jersey City, N. J.	Caster, pepper	Sept. 25, 1866.

52,762	Soggs, Henry	Columbus, Pa.	Water wheels	Feb. 20, 1866.
59,868	Solhet, Charles J. M., and H. C. T. Molvaut	New York, N. Y.	Compound for lighting cigars, &c	Nov. 27, 1866.
2,341	Sohl, Levi, and A. J. and David Gibson	Indianapolis, Ind	Trade mark (Design)	June 26, 1866.
	Solmson, J., *et al.* (*See* Rosenthal, Theodore, assignor.)			
57,398	Solomon, George R., jr., and Joseph	New York, N. Y.	Registers' ticket	Aug. 21, 1866.
57,786	Solter, John	Baltimore, Md.	Washer, tumbler	Sept. 4, 1866.
54,973	Somers, D. M.	Washington, D. C.	Washer and cooler, tumbler	May 22, 1866.
60,274	Somers, Philip W.	Danbury, Conn.	Hat bodies, machine for felting	Dec. 4, 1866.
60,275	Same	do	Hat bodies by machinery, roll for felting or sizing	Dec. 4, 1866.
53,695	Somes, Daniel E.	Washington, D. C.	Gases to be used for motive power, process of generating	Apr. 3, 1866.
57,787	Same	do	Gas for motive power, generating	Sept. 4, 1866.
59,154	Same	do	Composition for forming useful and ornamental articles	Oct. 23, 1866.
52,902	Sonnekalb, Albert, and John W. Lieb	Newark, N. J	Bags, carpet	Feb. 27, 1866.
57,399	Same	do	Bag, carpet, frames	Aug. 21, 1866.
	Soper, Horace H. (*See* La Dew, William, assignor.)			
53,245	Soper, Philo	London, Canada	Dental drills	Mar. 13, 1866.
57,588	Soper, Philo	Buffalo, N. Y	Calipers	Aug. 28, 1866.
53,092	Sorel, Stanislas	France	Composition to be used as a cement and as a plastic material for moulding various articles.	Mar. 6, 1866.
56,286	Sorley, E. M.	Neenah, Wis.	Cultivators	July 10, 1866.
	Soule, Howard, jr., and L. K. Cole. (*See* Cole & Soule.)			
59,775	Soule, Samuel W., and C. Latham Sholes	Milwaukee, Wis.	Numbering machine	Nov. 13, 1866.
55,384	Soules, Simon	Dowagiac, Mich.	Diggers, potato	June 5, 1866.
58,313	Soumeillian, William B.	Philadelphia, Pa.	Billiard table, attachment for the legs of	Sept. 25, 1866.
59,736	Sourzac, Louis G., and Louis Bombail	France	Leather more durable and flexible, mode of rendering	Nov. 13, 1866.
52,802	Southall, Charles Henry, and Robert Heap	England	Boots and shoes, machine for making	Feb. 20, 1866.
57,989	Southland, S. E.	Jamestown, N. Y.	Butter and lard, covered tub for	Sept. 11, 1866.
	Southwell, William	West Cambridge, Mass.	Saw blades, &c., machinery for grinding or polishing. (Extension.)	May 1, 1866.
	Southworth, Consider, and George A. Cooper. (*See* Cooper & Southworth.)			
57,205	Sowden, Adam	Cincinnati, Ohio	Saw-toothing machine	Aug. 14, 1866.
57,005	Sowles, Willis W.	Manlius, N. Y.	Harvesters	Aug. 7, 1866.
	Spadone, Amedee. (*See* Warren, D. T., assignor.)			
52,763	Spafford, Nathan H.	Baltimore, Md.	Bristles, machine for separating	Feb. 20, 1866.
54,033	Same	do	Bristles, machine for bundling	Apr. 17, 1866.
54,034	Same	do	Bristles, machine for combing	Apr. 17, 1866.
59,286	Same	do	Bristles, machine for assorting	Oct. 30, 1866.
	Spake, R., and A. Carter. (*See* Carter & Spake.)			
	Spangenberg, E., and H. Huffendick. (*See* Huffendick & Spangenberg.)			
58,905	Spangle, George W.	Clifton Springs, N. Y.	Fluid, burning	Oct. 16, 1866.
	Spangler, E. J., *et al.* (*See* Parks, Robert, assignor.)			
60,276	Sparks, Reuben	Buffalo, N. Y.	Steering apparatus	Dec. 4, 1866.
	Sparks, Simon, and Stephen C. Mendenhall. (*See* Mendenhall & Sparks.)			
57,589	Sparks, Thomas E.	Norwich, Conn.	Lamps	Aug. 28, 1866.
	Sparks, William E., and G. Truman Smith. (*See* Smith & Sparks.)			
	Spaulding, A. F., and S. M. Scott. (*See* Foster, Calvin A., ass'r.)			
	Spaulding, [illegible] *et al.* (*See* Jones, Spaulding & Parkins.)			
54,621	Spaulding, Charles F.	St. Johnsbury, Vt.	Metal, machine for spinning	May 8, 1866.
54,035	Spaulding, George T.	Brodhead, Wis.	Broom head	Apr. 17, 1866.

List of patentees of inventions, designs, and reissues, 1866--Continued.

No.	Name of patentee.	Residence.	Invention or discovery.	Date.
	Spaulding, I. D. (*See* Coffin, D. N. B., jr., assignor.)			
52,086	Spaulding, Irah D., and David N. B. Coffin, jr	Boston, Mass	Press, copying	Jan. 16, 1866.
2,291	Spaulding Samuel B., assignor through mesne assignments to Daniel E. Paris.	Troy, N. Y	Stoves, cooking (Reissue)	June 19, 1866.
58,496	Speakman, T. S	Philadelphia, Pa	Range, safety-valves in water-backs for	Oct. 2, 1866.
57,400	Spear, Chauncey, assignor to self, W. Marks, G. L. Archer, and W. L. Parkhurst.	Hopewell, N. Y	Roofing, &c., composition for	Aug. 21, 1866.
59,517	Spear, Chauncey, assignor to self, H. C. Lucas, and W. Marks	Chapinsville, N. Y	Car coupling	Nov. 6, 1866.
54,228	Spear, E. R., and W. P	Orland, Ind	Rakes, horse	Apr. 24, 1866.
53,054	Spear, George W	New York, N. Y	Well, boring	Mar. 6, 1866.
58,689	Spear, Jacob A	Braintree, Vt	Rakes, horse	Oct. 9, 1866.
53,497	Spear, James	Philadelphia, Pa	Stoves, cooking. (Antedated January 10, 1866)	Mar. 27, 1866.
2,305	Same	do	Stoves, ash sifting pan for (Reissue)	July 10, 1866.
2,372	Same	do	Stoves, cooking (Division A, reissue)	Oct. 9, 1866.
2,373	Same	do	Stoves, cooking (Division B, reissue)	Oct. 9, 1866.
2,374	Same	do	Stoves, cooking (Division C, reissue)	Oct. 9, 1866.
	Spear, John D., and William Alford. (*See* Alford & Spear. Extension.)			
	Spear, N. F., *et al.* (*See* Stackpole, Greenleaf, assignor.)			
58,906	Speck, Frederick	Waynesborough, Pa	Water wheels	Oct. 16, 1866.
56,114	Speer, Rachel	Passaic, N. J	Nails and tacks	July 3, 1866.
60,078	Speirs, John	Boston, Mass	Tobacco-pipe case	Nov. 27, 1866.
55,730	Speissegger, Thomas W	Charleston, S. C	Medical composition	June 19, 1866.
52,085	Spelman, Stephen	Westfield, Mass	Washing machine	Jan. 16, 1866.
52,087	Spence, James F	Brooklyn, N. Y	Air, apparatus for carburetting. (Antedated January 3, 1866)	Jan. 16, 1866.
53,496	Same	Williamsburg N. Y	Condensers	Mar. 27, 1866.
54,428	Same	do	Condensers, revolving	May 1, 1866.
57,788	Same	do	Air, apparatus for carburetting	Sept. 4, 1866.
58,907	Same	Brooklyn, N. Y	Eyes, shades for protecting	Oct. 16, 1866.
53,093	Spence, Peter	Great Britain	White lead, manufacture of	Mar. 6, 1866.
59,090	Spencer, Charles F	Rochester, N. Y	Buttons	Oct. 23, 1866.
2,242	Spencer, Charles, assignor to R. A. Bunnel	do	Jar, preserve (Reissue)	May 15, 1866.
58,314	Spencer, Charles L	Providence, R. I	Needle threader	Sept. 25, 1866.
2,235	Spencer, C. M., assignor through mesne assignments to the Spencer Repeating Rifle Company.	Boston, Mass	Fire-arms, self-loading (Reissue)	May 1, 1866.
58,737	Spencer, Christopher M., assignor to Spencer Repeating Rifle Company.	do	Fire-arms magazine	Oct. 9, 1866.
58,737	Same	do	Fire-arms magazine	Oct. 9, 1866.
54,788	Spencer, David	Philadelphia, Pa	Sifter, flour	May 15, 1866.
55,547	Spencer, Elihu, and E. L. Mayer	Elizabeth, N. J	Water meters	June 12, 1866.
2,141	Spencer, Isaac S., assignor to Nelson Palmer	Hudson, N. Y	Threshing machine (Reissue)	Jan. 2, 1866.
58,497	Spencer, James H	Philadelphia, Pa	Floor coverings, manufacture of	Oct. 2, 1866.
53,696	Spencer, John M	Ottowa, Ill	Stripping sorghum, machine for	Apr. 3, 1866.
59,091	Spencer, N. H	Canandaigua, N. Y	Churn-dasher	Oct. 23, 1866.
57,207	Spencer, Silas L	Hopewell X Roads, Md	Potato and drill machines	Aug. 14, 1866.

	Spencer, The. C., and William H. Sangster. (*See* Sangster & Spencer.			
57,401	Spencer, Thomas H.	Providence, R. I.	Box, blacking	Aug. 21, 1866.
60,647	Spenli, Matthias	Detroit, Mich	Lathes, wood-turning	Dec. 18, 1866.
2,277	Sperry, T. S., assignor to the Silver Skirt and Wire Manufacturing Company.	New York, N. Y.	Skirt wire, manufacture of (Reissue)	June 5, 1866.
57,590	Sperry, Wilson and Hiram	Trivoli, Ill	Hedge trimmers	Aug. 28, 1866.
2,329	Spicer, George T	Providence, R. I.	Stove, cook (Design)	May 29, 1866.
	Spiller, J. G., and Newell Barnard. (*See* Barnard & Spiller.)			
52,617	Splitdorf, Henry	New York, N. Y.	Galvanic batteries, connections for	Feb. 13, 1866.
	Splitdorf, Henry, and James J. Clark. (*See* Clark & Splitdorf.)			
55,787	Spofford, Charles, and C. H. Hersey, assignors to selves, W. E. Hawes, and F. C. Hersey.	Boston, Mass	Gins, cotton	June 19, 1866.
57,208	Spooner, G. D., and J. F. F. Hale	Rutland, Vt.	Car coupling	Aug. 14, 1866.
53,354	Spooner, J. C.	Springfield, Mass	Album, porcelain and card	Mar. 20, 1866.
59,930	Spoor, Stephen	Phelps, N. Y.	Gates	Nov. 20, 1866.
60,435	Same	...do	Gates. (Antedated November 21, 1866)	Dec. 11, 1866.
59,470	Spore, David	Sharon, Wis	Bed bottom	Nov. 6, 1866.
54,789	Sprague, Ara D., and Asbury Dockhum	Caledonia, Minn.	Harvester, rakes	May 15, 1866.
55,548	Sprague, A. W.	Boston, Mass	Gases for inhalation, apparatus for generating and washing	June 12, 1866.
55,731	Sprague, Edwin	Allegheny, Pa	Engines, steam-valve gear for	June 19, 1866.
56,287	Sprague, Henry D.	Portland, Me	Coffins	July 10, 1866.
51,878	Sprague, Leonard A.	New York, N. Y.	Shoe lacing	Jan. 2, 1866.
55,923	Same	...do	Boots and shoes, lacing for	June 26, 1866.
57,789	Spratt, William S	West Manchester, Pa	Hay forks, horse. (Antedated August 17, 1866)	Sept. 4, 1866.
55,732	Springer, Joseph H., and William M. Bartram	Philadelphia, Pa.	Steam generators, indicators for	June 19, 1866.
59,285	Springer, T. G.	Conneautville, Pa.	Wagon brakes	Oct. 30, 1866.
	Springle, James H. (*See* Ceredo, Paul, assignor.)			
58,690	Sprink, John	Council Bluffs, Iowa	Hair restorative	Oct. 9, 1866.
2,148	Sprout, Ariel B.	Hughesville, Pa.	Rakes, horse (Reissue)	Jan. 16, 1866.
54,429	Same	...do	Steel, process for tempering	May 1, 1866.
54,430	Same	...do	Rake, horse, teeth	May 1, 1866.
54,431	Same	...do	Hay forks, horse	May 1, 1866.
52,764	Squaza, Vincent	San Francisco, Cal.	Oils, essential, machines for extracting	Feb. 20, 1866.
57,790	Squire, Alvin G.	Pelham, Mass.	Stones, scythe, manufacture of	Sept. 4, 1866.
59,869	Squire, William P.	Paris, Ill.	Pumps	Nov. 20, 1866.
59,870	Same	...do	Derricks, hay	Nov. 20, 1866.
53,697	Squyer, Horatio	Rochester, N. Y.	Stove, laundry	Apr. 3, 1866.
53,194	Staats, John T.	New York, N. Y.	Amalgamator	Mar. 13, 1866.
2,162	Stabler, Francis	Baltimore, Md	Preserving animal and vegetable substances, process for. (Reissue.)	Jan. 30, 1866.
53,355	Same	...do	Animal and vegetable substances, apparatus for packing	Mar. 20, 1866.
55,549	Stachelin, Martin, and Henry Young	Port Chester, N. Y.	Locks. (Antedated June 8, 1866)	June 12, 1866.
	Stackhouse, George, and Foster Nevergold. (*See* Nevergold & Stackhouse.)			
	Same.			
53,088	Stackpole, Greenleaf, ass'or to self, N. F. Spear, C. and D. Cobb.	New York, N. Y.	Canal propulsion, devices for	Mar. 6, 1866.
60,436	Stadermann, John, and Henry Sauerbier	...do / Newark, N. J.	Breast protectors	Dec. 11, 1866.
51,977	Stafford, A. J., and S. Crossman	Essex, N. Y.	Washing machine	Jan. 9, 1866.
52,765	Stafford, Charles W.	New York, N. Y.	Quartz crushers	Feb. 20, 1866.
59,676	Same	Saybrook, Conn.	Ore crushers	Nov. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Name of patentee.	Residence.	Invention or discovery.	Date.
56,662	Stafford, M. B	New York, N. Y	Peat machine	July 24, 1866.
57,791	Same	do	Moulds, jointed, construction of	Sept. 4, 1866.
51,879	Stafford, Nelson	Brooklyn, N. Y	Liquids, thiefs and tests for	Jan. 2, 1866.
51,978	Stager, H. E	Milwaukee, Wis	Wood-bending machine	Jan. 9, 1866.
55,924	Stagg, David I	New York, N. Y	Book holder	June 26, 1866.
55,925	Same	do	Stand, desk, and book holder	June 26, 1866.
58,908	Same	do	Seat and desk	Oct. 16, 1866.
55,926	Staman, John K	Mifflin, Ohio	Fence, portable	June 26, 1866.
	Stanbro, S. D., *et al.* (*See* Keck, Rudolph, assignor.)			
56,115	Stanford, Otis W	Lebanon, Ohio	Churns	July 3, 1866.
	Stange, Nicholas, and Alexandre Schpakossky. (*See* Schpakossky & Stange.)			
52,935	Staniford, William E., assignor to self and Edwin Sherman	Bucksport, Maine	Clothes sprinkler	Feb. 27, 1866.
58,498	Stanley, Elbridge, and James Goodrich	Fitchburg, Mass	Saw gauge, angular	Oct. 2, 1866.
57,006	Stanley, I. N	Brooklyn, N. Y	Gas mains	Aug. 7, 1866.
55,927	Stannard, Monroe, assignor to Pratt, Whitney & Company	New Britain, Conn	Sewing machines, needles for	June 26, 1866.
56,627	Stansburg, Joseph A	Baldwinsville, N. Y	Pumps	July 24, 1866.
52,903	Stansburg, T. A	Saybrook, Conn	Ploughs	Feb. 27, 1866.
52,618	Stansell, C. C	Middleboro', Mass	Lamp-wick adjuster	Feb. 13, 1866.
54,432	Stanton, J. M. and S. F	Manchester, N. H	Saw mills, head blocks to	May 1, 1866.
	Stanton, Samuel, *et al.* (*See* Turrell, Stanton & Ward.)			
	Stanwood, Isaac, and Jesse Lewis. (*See* Lewis & Stanwood.)			
58,691	Stanyan, John M	Milford, N. H	Dough mixer	Oct. 9, 1866.
57,591	Staples, Charles E	Worcester, Mass	Sewing work holders and scissor sharpeners combined	Aug. 28, 1866.
57,209	Staples, E. L	Nashville, Tenn	Tables	Aug. 14, 1866.
55,022	Staples, E. L., assignor to James E. Rust	do	Pumps	May 22, 1866.
	Staples, Henry. (*See* Hammond, Joshua F., assignor.)			
55,928	Staples, Henry H	Woburn, Mass	Washing machine	June 26, 1866.
54,622	Staples, M. W	Saratoga Springs, N. Y	Washing machine	May 8, 1866.
58,147	Stark, Andrew	Topeka, Kansas	Cultivators	Sept. 18, 1866.
56,820	Stark, Jerome B	Fisherville, N. H	Mortising machine	July 31, 1866.
59,320	Starkey, John, assignor to Bryon D. Verrill	Portland, Maine	Eyelet, curtain	Oct. 30, 1866.
58,909	Starnes, W. F	Macomb, Ill	Stalks in the field, machine for cutting	Oct. 16, 1866.
57,211	Starr, Eli T	Philadelphia, Pa	Dentists, vulcanizing flask for	Aug. 14, 1866.
56,288	Starr, Esen	Royal Oak, Mich	Cultivators	July 10, 1866.
59,471	Starr, J. H	Middleburg, N. Y	Bee hives	Nov. 6, 1866.
54,433	Starr, Nicholas, jr	Homer, N. Y	Horse-powers	May 1, 1866.
	Starr, William S., and Stephen B. Brague. (*See* Brague & Starr.)			
59,677	Starry, W. H	Middletown, Ohio	Bag holders	Nov. 13, 1866.
59,092	Stattmann, Christian and Frederick	Chicago, Ill	Caps	Oct. 23, 1866.
57,402	Stayman, A. F	Baltimore, Md	Tobacco pipe	Aug. 21, 1866.
58,499	Stead, George	Brooklyn, N. Y	Roofing cement	Oct. 2, 1866.
58,910	Stead, Thomas	Cleveland, Ohio	Signal, railroad	Oct. 16, 1866.
2,426	Steadman, J	Pecatonica, Ill	Punching machine (Reissue)	Dec. 18, 1866.

2,279	Steadman, T. S., assignor, through mesne assignments, to Benjamin F. Wright.	Springfield township, Ohio.	Harvesters, clover and grass seed.....(Reissue)..	June 5, 1866.
2,388	Stealey, Thomas I., assignor to Robert T. Campbell.....	Washington, D. C.....	Harvesters, mode of supporting reels of.....(Reissue)..	Nov. 6, 1866.
55,733	Stealey, Israel.....	Crestline, Ohio.....	Pessaries.....	June 19, 1866.
58,315	Stearns, Caleb S.....	Marlboro', Mass.....	Leather, machine for cutting.....	Sept. 25, 1866.
52,904	Stearns, E. H.....	Erie, Pa.....	Saw mills, head blocks for.....	Feb. 27, 1866.
60,648	Same.....	....do.....	Saw mills.....	Dec. 18, 1866.
58,316	Stearns, E. I.....	Honesdale, Pa.....	iphons.....	Sept. 25, 1866.
58,692	Stearns, G. N.....	Syracuse, N. Y.....	Saws, vise for holding.....	Oct. 9, 1866.
59,331	Steart, James.....	England.....	Fiber from China grass, &c., method of extracting.....	Oct. 30, 1866.
60,079	Stebbins, B. P.....	Corry, Pa.....	Stills.....	Nov. 27, 1866.
56,821	Stecher, P. A.....	New York, N. Y.....	Pockets, safety.....	July 31, 1866.
55,929	Stick, Daniel.....	Hughesville, Pa.....	Dams, means for fish to pass over.....	June 26, 1866.
	Stedman, L. (*See* Meglone, Whitney W., assignor.)			
60,080	Steed, J. W.....	Minneapolis, Minn.....	Jacks, hoisting.....	Nov. 27, 1866.
58,029	Steele, Elbridge, assignor to self and A. E. Taylor.....	New Britain, Conn.....	Shade, window, fastening.....	Sept. 11, 1866.
2,427	Steele, W.....	Wheeling, West Va.....	Staves, machine for cutting.....(Reissue)..	Dec. 18, 1866.
58,500	Steen, Clinton.....	Athens, Ohio.....	Ploughs.....	Oct. 2, 1866.
	Steer, Edwin. (*See* Gusman, Lewis B., assignor.)			
2,142	Steers, Abraham.....	Medina, N. Y.....	Extracts, making.....(Reissue)..	Jan. 2, 1866.
58,501	Stefani, Francis.....	New York, N. Y.....	Jewelry, mode of setting stones in.....	Oct. 2, 1866.
2,485	Steffe, Jacob, assignor to Thomas Foster.....	Philadelphia, Pa.....	Stove, cooks'.....(Design)..	Oct. 2, 1866.
	Stehman, Henry H., and Amos B. Christ. (*See* Christ & Stehman.)			
53,698	Steiger, John G.....	Cleveland, Ohio.....	Spokeshaves.....	Apr. 3, 1866.
54,790	Steiner, John, and John P. Miller.....	Harrisburg, Ohio.....	Harrow and roller combined.....	May 15, 1866.
	Steinhart, M., *et al.* (*See* Baumgarten, Moritz, assignor.)			
	Same.			
	Steinhaus, August W. (*See* Hoffacker, Bertrand J., assignor.)			
55,385	Steinway, William.....	New York, N. Y.....	Piano-fortes.....	June 5, 1866.
56,822	Steller, Charles E.....	Chicago, Ill.....	Bog cutters.....	July 31, 1866.
56,628	Stenton, Robert S.....	Brooklyn, N. Y.....	Wrenches.....	July 24, 1866.
57,990	Stephen, John, and William Zeller.....	Worrelsdorf, Pa.....	Pie rimmer.....	Sept. 11, 1866.
59,742	Stephens, D. H.....	Riverton, Conn.....	Tenons, tools for making.....	Nov. 6, 1866.
59,871	Same.....	....do.....	Rule joints, machine for making.....	Nov. 20, 1866.
57,592	Stephens, Edward J., and Hiram E. Green.....	Pawtucket, R. I.....	Printing yarn, machine for.....	Aug. 28, 1866.
	Stephens, I., and Geo. Hasecoster. (*See* Hasecoster & Stephens.)			
	Stephens, Wm. P., and M. G. Smith. (*See* Smith & Stephens.)			
	Stephenson, A., and C. W. Willis. (*See* Willis & Stephenson.)			
54,791	Stephenson, A. P.....	Equality, Ill.....	Stripper, sorghum.....	May 15, 1866.
57,403	Sterling, Charles A.....	New York, N. Y.....	Fluting machine.....	Aug. 21, 1866.
59,287	Sterrett, T. K., and W. R. Farrell.....	Philadelphia, Pa.....	Letter-box file.....	Oct. 30, 1866.
56,823	Stevens, Andrew.....	West Milton, Ohio.....	Drying apparatus.....	July 31, 1866.
57,211	Stevens, Charles L.....	Galesburg, Ill.....	Water into railroad tanks, method of elevating.....	Aug. 14, 1866.
54,974	Stevens, Hiram.....	New Haven, Conn.....	Nests, hen's.....	May 22, 1866.
54,434	Stevens, J., and W. B. Fay.....	Chicopee Falls, Mass.....	Curtain fixture.....	May 1, 1866.
	Stevens, J. and E., & Company. (*See* Meldrum, Willis W., ass'r.)			
57,050	Stevens, Judd, assignor to the Chicago Ditching and Spading Machine Company.	Chicago, Ill.....	Ditching machine.....	Aug. 7, 1866.
56,116	Stephens, Levi.....	Fitchburg, Mass.....	Gas for illuminating and other purposes, treating.....	July 3, 1866.
59,473	Same.....	....do.....	Air, apparatus for carburetting.....	Nov. 6, 1866.
59,474	Same.....	....do.....	Air, apparatus for carburetting.....	Nov. 6, 1866.
58,559	Stevens, Levi, assignor to self and Norman C. Munson.....	....do.....	Air, apparatus for carburetting.....	Oct. 2, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,693	Stevens, L. O	Pekin, Ill	Cultivators, corn	Oct. 9, 1866.
59,931	Stevens, Lyman S	Waltham, Mass	House, smoke, metallic, portable	Nov. 20, 1866.
56,824	Stevens, Michael	Smithville, Ohio	Mills, cider, presses for	July 31, 1866.
52,766	Stevens, N. P	Lowell, Mass	Engines, steam, link motion for	Feb. 20, 1866.
56,629	Stevens, Simon	New York, N. Y	Burning gas for the production of heat, light, &c., process of	July 24, 1866.
59,475	Stevens, William H	Winona, Minn	Press, cheese	Nov. 6, 1866.
60,081	Stevens, William J	New York, N. Y	Valves, slide	Nov. 27, 1866.
55,174	Stevenson, George, and John J. Crider	Zionsville, Ind. / Greenfield, Ind.	Grain clearer	May 29, 1866.
55,386	Stevenson, John J	Auburn, N. Y	Lubricating journals. (Antedated May 22, 1866)	June 5, 1866.
58,502	Stewart, A	Cincinnati, Ohio	Cans, fruit, tops for	Oct. 2, 1866.
60,587	Stewart, Horace P	Oak's Corners, N. Y	Boots and shoes	Dec. 18, 1866.
60,588	Same	...do	Boots and shoes, manufacture of	Dec. 18, 1866.
	Stewart, J., and W. E. Doubleday. (*See* Osborn, William, assignor.) Reissue.			
	Same.			
	Stewart, John W., and Miles H. Card. (*See* Card & Stewart.)			
54,435	Stewart, Josiah B	South Paris, Me	Hay forks	May 1, 1866.
52,767	Stewart, J. Severance	Homer, N. Y	Churns	Feb. 20, 1866.
56,630	Stewart, J. Severance, and Samuel B. Pierce	...do	Curtain fixture. (Antedated July 15, 1866)	July 24, 1866.
52,768	Stewart, Mathew	Philadelphia, Pa	Lamp shades	Feb. 20, 1866.
52,221	Stewart, Robert	Elmira, N. Y	Valves, cut-off	Jan. 23, 1866.
53,896	Same	...do	Auger, angular	Apr. 10, 1866.
52,458	Stewart, Thomas	Pittsburg, Pa	Rakes, horse	Feb. 6, 1866.
51,979	Stewart, H	Berlin, Wis	Horseshoes, device for forming	Jan. 9, 1866.
	Stewart, V. R., and A. O. Remington. (*See* Remington & Stewart.)			
60,649	Stewart, Washington H	Logansport, Ind	Sawing machines	Dec. 18, 1866.
	Stewart, Wm. S., and Franklin O. Day. (*See* Day & Stewart.)			
	Design.			
	Same.			
	Same.			
58,503	Stierle, C., and John C. Baer	Cincinnati, Ohio	Engine, steam, globe valves	Oct. 2, 1866.
57,404	Stiles, Ezra, assignor to self, J. R. Morris, and W. F. Goodwin.)	Springfield, Mass	Car truck, safety	Aug. 21, 1866.
52,459	Stiles, Henry B	New Haven, Conn	Water motors	Feb 6, 1866.
58,317	Stiles, John W	New York, N. Y	Water by steam, means of raising	Sept. 25, 1866.
52,335	Stiles, Norman C	Meriden, Conn	Presses, power, clutch for	Jan. 30, 1866.
53,499	Same	West Meriden, Conn	Press, foot	Mar. 27, 1866.
56,631	Same	Meriden, Conn	Presses, punches, &c., adjustable pitmen for	July 24, 1866.
	Same. (*See* Tucker, F. O., and William W., assignors.)			
	Still, A. T., *et al.* (*See* Canfield, Still & Wheeler.)			
55,734	Stillings, Alden B	Springfield, Mass	Knitting machines	June 19, 1866.
54,792	Stillman, Christopher C	Westerly, R. I	Water wheels	May 15, 1866.
57,007	Stillman, William W	Mt. Hawley, Ill	Ploughs, cultivator	Aug. 7, 1866.
57,792	Stillwell, Addison F	Fayette, Iowa	Cultivators	Sept. 4, 1866.

2,159	Stilwell, Edwin R	Dayton, Ohio	Heaters and filters, feed-water (Division 1, reissue)	Jan. 23, 1866.
2,160	Same	do	Heaters and filters, feed-water (Division 2, reissue)	Jan. 23, 1866.
57,212	Stilz, Charles F., and John C. Knoepke	Pennsylvania City, Pa	Cans, preserve	Aug. 14, 1866.
55,930	Stimmel, Henry	Canton, Ohio	Rakes, horse	June 26, 1866.
53,356	Stimpson, George, jr	New York, N. Y	Pens, manufacture of	Mar. 20, 1866.
58,634	Stimpson, James	Baldwinsville, Mass	Wringing machines, clamp for	Oct. 9, 1866.
57,213	Stimson, Enos	Montpelier, Vt	Grater for carrots and other vegetables. (Antedated July 30, 1866)	Aug. 14, 1866.
58,911	St. John, Carlisle	Keosauqua, Iowa	Ploughs	Oct. 16, 1866.
51,980	St. John, William W	Syracuse, N. Y	Drill head	Jan. 9, 1866.
52,460	St. John, W. W	St. Louis, Mo	Stove-pipe damper	Feb. 6, 1866.
57,593	Same	do	Grubbing machine	Aug. 28, 1866.
60,589	Same	do	Plough gang and cultivator, combined	Dec. 18, 1866.
58,361	Stobwasser, Gustav, assignor to E. Douglas, Son & Company	Russia	Lamps	Sept. 25, 1866.
	Stochin, Abner C., and Ruel W. Whitney. (*See* Whitney & Stochin.)			
52,797	Stocker, Edward, assignor to self and Emanuel Shober	Lancaster, Pa	Hydrants	Feb. 20, 1866.
55,173	Stocking, Amos D	Dowagiac, Mich	Cultivators	May 29, 1866.
57,447	Stockmar, Alexander C., assignor to self and William S. See	New York, N. Y	Vises or clamps, hand	Aug. 21, 1866.
52,769	Stockton, F. R	do	Graver	Feb. 20, 1866.
57,214	Stockton, H., and W. S. Smoot	Newport, R. I. / Washington, D. C.	Saddles	Aug. 14, 1866.
57,793	Stockton, S. W	Philadelphia, Pa	Teeth, artificial, to bases, attaching	Sept. 4, 1866.
	Stockton, Volney. (*See* McLean, William S., assignor.)			
	Stoddard E. B. (*See* Coleman, C. C.)			
56,117	Stoddard, Isaac H	America, N. Y	Table, ship's. (Antedated June 30, 1866)	July 3, 1866.
54,436	Stoddard, J. C., assignor to J. B. Knox	Worcester, Mass	Car windows, portable deflector for	May 1, 1866.
57,405	Stoddard, Oren	Busti, N. Y	Shingle machines	Aug. 21, 1866.
59,288	Stoddard, Oscar	Jackson, Mich	Boots and shoes	Oct. 30, 1866.
60,277	Stoddard, Quincy	do	Leather, machine for rolling	Dec. 4, 1866.
52,461	Stoeckel, George W	Pittsburg, Pa	Bottle, graduated	Feb. 6, 1866.
59,932	Stofer, John	Cleveland, Ohio	Brush, window	Nov. 20, 1866.
57,594	Stoffel, Ignatius	Washington, D. C	Arms, artificial	Aug. 28, 1866.
	Stoffer, Jacob, and G. W. Sanor. (*See* Sanor & Stoffer.)			
57,991	Stoker, A. W	Petersburg, Ill	Ploughs	Sept. 11, 1866.
54,477	Stoker, François	France	Fuel, composition for	May 1, 1866.
53,750	Stoker, H. M., assignor to self and J. C. Stoker	Watson, Ill	Pumps	Apr. 3, 1866.
54,263	Stoll, Charles G. and William, assignors to Charles G. Stoll	East New York, N. Y	Separator, grain	Apr. 24, 1866.
54,437	Stoll, Conrad	Mokena, Ill	Cheese boxes	May 1, 1866.
57,794	Stoll, Henry C	do	Churns	Sept. 4, 1866.
56,825	Stone, A. C	Steelsville, Pa	Metals, machines for rolling	July 31, 1866.
53,699	Stone, Charles	Stoughton, Mass	Boots and shoes, piping for	Apr. 3, 1866.
53,751	Stone, George F., assignor to J. H. Whithurst	Philadelphia, Pa	Cans, sheet-metal	Apr. 3, 1866.
60,590	Stone, H. R., and E. N. Schoultz	Greenwich, N. Y	Wood, stuffing and varnishing	Dec. 18, 1866.
55,550	Stone, Isaac H	St. Louis, Mo	Hose protector	June 12, 1866.
56,826	Stone, John, and Samuel Blocker, sr	Plattsburg, Mo	Fence	July 31, 1866.
2,254	Stone, J. H	Philadelphia, Pa	Vessels, sheet-metal base for (Design)	Jan. 30, 1866.
54,036	Stone, N. F	Chicago, Ill	Cutter grinder	Apr. 17, 1866.
54,037	Same	do	Saw teeth, tool for upsetting	Apr. 17, 1866.
53,055	Stone, Royal W., and A. J. Kendrick	Rowe, Mass	Dish drainer and dryer	Mar. 6, 1866.
2,325	Stone, Samuel F., assignor to self and Levi H. Stone	Providence, R. I	Trade mark (Design)	May 22, 1866.
56,827	Stone, Samuel S	Troy, N. Y	Collars, paper	July 31, 1866.
57,008	Stone, Warren H	St. Johns, Mich	Fruit, device for gathering	Aug. 7, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,897	Stoner, Daniel	Chicago, Ill	Collars, paper, button-holes for	Apr. 10, 1866.
60,278	Stoner, Daniel, and John Sigwalt, jr	do	Collars, paper, machine for boxing	Dec. 4, 1866.
	Storer, George, and Jared B. Flagg. (*See* Flagg & Storer.)			
59,678	Storer, George W	Portland, Conn	Tag or label	Nov. 13, 1866.
	Storer, Jacob J., and James D. Whelpley. (*See* Whelpley & Storer.)			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
53,195	Storer, John	New York, N. Y	Engines, steam, lubricators for	Mar. 13, 1866.
55,551	Storle, Ole. O	North Cape, Wis	Harvester rakes	June 12, 1866.
54,438	Storm, William Mont	Harlem, N. Y	Submarine explorer	May 1, 1866.
57,009	Same	New York, N. Y	Process for refining liquors	Aug. 7, 1866.
	Storms, James, and Henry Dover. (*See* Dover and Storms.)			
59,530	Storey, T., and W B. Wilson	England	Leather cloth, manufacture of	Nov. 6, 1866.
2,200	Story, Ira C., assignor to self and George W. Skaats	Cincinnati, Ohio	Locomotives, street, running gear of (Reissue)	Mar. 13, 1866.
53,700	Story, James	Paris, Ky	Telegraph cables	Apr. 3, 1866.
56,118	Story, Joseph M	Cincinnati, Ohio	Paddle wheels, means for driving	July 3, 1866.
	Stout, C. W., *et al.* (*See* Bellamy, John H., assignor.) Design.			
	Stout, Elisha P. (*See* Barber, James W., assignor.)			
57,992	Stout, Stephen	Tremont, Ill	Ploughs, sulky	Sept. 11, 1866.
56,632	Stout, Thomas B	Keyport, N. J	Table	July 24, 1866.
52,905	Stover, Andrew J	Sandyville, Iowa	Cultivators	Feb. 27, 1866.
56,460	Stover, Atkins	New York, N. Y	Wrenches, screw	July 17, 1866.
56,289	Stover, D. C	Lanark, Ill	Cultivators	July 10, 1866.
59,289	Stover, George	Center Hill, Pa	Carriage tops, raising and lowering	Oct. 30, 1866.
55,735	Stow, Alonzo	Calais, Vt	Tires, device for upsetting	June 19, 1866.
60,591	Stow, D. W	Thorntown, Ind	Compound for the cure of diseases in hogs	Dec. 18, 1866.
58,148	Stow, Jesse, and James White	Geneva, Ohio / Cleveland, Ohio	Roofing cement	Sept. 18, 1866.
52,336	Stow, Nathan C	Stoneham, Mass	Burnishing machine	Jan. 30, 1866.
	Stowell, Arthur C. (*See* Draper, John W., assignor.)			
52,088	Stowell, Samuel E	Clarkstown, Mass	Collar, breast	Jan. 16, 1866.
53,357	Stowell, William J	Baltimore, Md	Railway switch	Mar. 20, 1866.
55,736	Same	do	do	June 19, 1866.
58,504	Strahan, W. H	Philadelphia, Pa	Grindstones, tool rest for	Oct. 2, 1866.
54,975	Strait, Hiram	Cincinnati, Ohio	Truck, railway. (Antedated May 1, 1866)	May 22, 1866.
57,595	Strait, Ransom E	West Onconta, N. Y	Pumps	Aug. 28, 1866.
57,596	Strange, E. C	Taunton, Mass	Egg-beater and liquor-mixer	Aug. 28, 1866.

55,931	Strater, Herman, jr	Roxbury, Mass	Cocks, stop	June 26, 1866.
53,383	Stratton, James, assignor to self, G. G. Evans, and D. W. Riddle	Philadelphia, Pa	Burners, hydro-carbon	Mar. 20, 1866.
52,089	Straub, A. W	do	Cars, railroad, wheels for	Jan. 16, 1866.
53,358	Straub, H. P	Cincinnati, Ohio	Mills, grinding	Mar. 20, 1866.
	Straus, L., *et al.* (*See* Beschke, William, assignor.)			
59,290	Stray, M. L. and O. A	Willoughby, Ohio	Fruit basket	Oct. 30, 1866.
59,291	Street, E. Dwight	East Haven, Conn	Threshing machine	Oct. 30, 1866.
60,082	Street, James R., and Sidney M. Davis	Washington, D. C	Faucets	Nov. 27, 1866.
53,701	Strect, Zadok	Salem, Ohio	Railroad rails, manufacture of	Apr. 3, 1866.
59,292	Strevell, W	Jersey City, N. J	Leather, device for stretching	Oct. 30, 1866.
59,093	Stricker, Mathias	Vincennes, Ind	Hogs, machine for scalding	Oct. 23, 1866.
52,222	Strickland, Lafayette	Talleyrand, Iowa	Ploughs, cultivator	Jan. 23, 1866.
54,793	Strobel, A. E	New York, N. Y	Weather-strip for doors	May 15, 1866.
56,828	Strobridge, Turner	Pittsburg, Pa	Lock-keeper, adjustable	July 31, 1866.
	Strong, D. A. (*See* Bacon, Fred. W., assignor.)			
	Strong, David A., and John K. Robinson. (*See* Robinson & Strong.)			
55,963	Strong, F. M., and Thomas Ross, assignors to John Howe, jr	Brandon, Vt	Scales, platform	June 26, 1866.
	Strong, H. A. (*See* Woodbury, Edmund F., assignor.)			
58,695	Strong, James A	North Wolcott, Vt	Shears, sheep. (Antedated September 30, 1866)	Oct. 9, 1866.
56,119	Stroud, William D	Oshkosh, Wis	Broom heads	July 3, 1866.
59,729	Strunk, Daniel, assignor to self and Franklin Strunk	Janesville, Wis	Wind-mills	Nov. 13, 1866.
	Stuart & Peterson. (*See* Martino, Beesley & Currie, assignors.)			
	Design.			
56,120	Stuart, Homer H	Jamaica, N. Y	Hydraulic engine	July 3, 1866.
60,437	Same	do	Gas and liquids, meters for	Dec. 11, 1866.
55,176	Stuart, Silas	Sterling, Mass	Brush, rotary	May 29, 1866.
58,957	Stubbs, Josiah, assignor to self and H. E. Foster	Decatur, Ill	Washing machine	Oct. 16, 1866.
54,439	Stuckenrath, Albert, assignor to William C. Barney	New York, N. Y	Cut-off and horse-power indicator, adjustable	May 1, 1866.
57,993	Stucky, Stephen	New Albany, Ind	Steam-generator safety valves	Sept. 11, 1866.
59,476	Studers, Johan Jacob	Richmond, Ind	Pile driver	Nov. 6, 1866.
52,462	Stickey, Joseph S	Sugar Grove, Ohio	Cultivators, corn	Feb. 6, 1866.
58,912	Stukey, Solomon	do	Grinding cob and corn, machine for	Oct. 16, 1866.
53,500	Sturdevant, Daniel B., William C. Parsons, and Freeland Wheeler.	Clifton Springs, N. Y	Shelves, milk	Mar. 27, 1866.
	Sturdevant, J. C., and M. Quinby. (*See* Quinby & Sturdevant.)			
58,149	Sturges, Stephen G	Newark, N. J	Amalgamator	Sept. 18, 1866.
2,286	Sturtevant, Benjamin F	Boston, Mass	Shoe pegs, blanks for (Reissue)	June 12, 1866.
57,795	Sturtevant, J. N., and Harvey E. Jones	McGregor, Iowa	Tanning, process for	Mar. 27, 1866.
53,501	Sturtevant, Thomas L	Boston, Mass	Cartridges, priming	Mar. 27, 1866.
54,038	Same	do	Cartridges, metallic, priming	Apr. 17, 1866.
55,552	Same	do	Cartridges, nippled, for breech-loading fire-arms	June 12, 1866.
60,592	Same	do	Fire-arms, breech-loading	Dec. 18, 1866.
59,803	Stuttsman, David W	Upshur, Ohio	Medical compound	Nov. 20, 1866.
53,702	Styles, George	New York, N. Y	Umbrellas	Apr. 3, 1866.
52,619	Suesserott, J. L	Chambersburg, Pa	Vehicles, attaching shafts to	Feb. 13, 1866.
52,463	Suggett, James	Cortlandville, N. Y	Wells, mode of operating	Feb. 6, 1866.
60,656	Same	do	Butter from whey, manufacture of	Dec. 18, 1866.
60,650	Suine, P. L	Shirleysburg, Pa	Fork and cake lifter	Dec. 18, 1866.
55,387	Sullivan, Edward	Pittsburg, Pa	Engines, steam, piston-heads for	June 5, 1866.
2,331	Sullivan, Julius L. D	Somerville, Mass	Spoon, handle of a (Design)	June 5, 1866.
56,633	Sullivan, Michael O	Thompson Station, Ill	Lice on trees, method of destroying	July 24, 1866.
	Sully, John, *et al.* (*See* Cary, Ebenezer, assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Sulter, Louis. (*See* Hensel, Henry, assignor.)			
	Summers, C., and J. Quinn. (*See* Quinn & Summers.)			
55,388	Summers, E. C.	Huntingdon, Pa.	Oil, floating from streams, apparatus for collecting	June 5, 1866.
58,150	Summers, J. W.	Tarr Farm, Pa.	Pumps, deep well	Sept. 18, 1866.
58,318	Summers, R. B., and S. Dement	San José, Ill.	Ploughs	Sept. 25, 1866.
52,620	Summer, Francis C.	Stoughton, Mass.	Shoe-lacing cutter	Feb. 13, 1866.
53,237	Sundelb, F., assignor to self and Anthony Chabot	New York, N. Y.	Mills, quartz	Mar. 13, 1866.
52,223	Sunderland, Marcus A.	Utica, N. Y.	Oil-cloth, instrument for cutting	Jan. 23, 1866.
52,337	Surerus, Jacob	Newark, N. J.	Pruning knife	Jan. 30, 1866.
55,737	Sussegger, Christoph	New York, N. Y.	Beverage	June 19, 1866.
56,121	Sutherland, E. G.	San Francisco, Cal.	Oil, process for refining	July 3, 1866.
56,829	Sutherland, James	East Hampton, Mass.	Mules, self-acting	July 31, 1866.
55,211	Sutherland, James, assignor to self and Joseph M. Mumford	....do	Spinning frames, mode of drawing spindles	May 29, 1866.
52,005	Sutherland, James W., assignor to self, John M. Lord, and Samuel C. Frink.	Indianapolis, Ind.	Railroad chairs	Jan. 9, 1866.
	Sutherland, John F. (*See* Fye, John, assignor.)			
53,898	Sutton, Edmund F.	New York, N. Y.	Lamp cleaner	Apr. 10, 1866.
51,880	Sutton, R. T.	Rochester, N. Y.	Dryer, grain	Jan. 2, 1866.
	Sutton, Sedgewick A., and Edward Bucklin, jr. (*See* Bucklin & Sutton.			
57,597	Sutton, William A.	New York, N. Y.	Skates	Aug. 28, 1866.
51,906	Swan, Henry	England	Stereoscopic apparatus	Jan. 2, 1866.
55,788	Swann, R. C., assignor to self, J. L. Riter, and T. J. West	Brownsville, Ind.	Smut machines	June 19, 1866.
	Swart, William T., and Horatio A. Brace. (*See* Brace & Swart.)			
54,039	Swartz, Samuel	Buffalo, N. Y.	Kegs, oyster, device for removing stoppers from	Apr. 17, 1866.
57,994	Swartz, Samuel M.	Millheim, Pa.	Planter, corn, and plough combined	Sept. 11, 1866.
52,224	Swartzel, Frederick	Germantown, Ohio	Water wheels	Jan. 23, 1866.
	Swearingen, E. P., and J. M. Wallis. (*See* Wallis & Swearingen.)			
54,976	Sweeny, Daniel and Stephen	Constableville, N. Y.	Stove-pipe damper	May 22, 1866.
60,083	Sweeney, James	New York, N. Y.	Bell, car	Nov. 27, 1866.
52,338	Sweeney, Michael, J. E. Matthews, and Thomas Hartley	Wheeling, West Va.	Glass moulds	Jan. 30, 1866.
51,902	Sweeney, Peter, ass'or to John J. Flannagan, and Josiah Oakes	New York, N. Y.	Drills, rock	Jan. 2, 1866.
55,553	Sweet, Miles	Troy, N. Y.	Currycombs	June 12, 1866.
58,151	Swectland, Alvah	Syracuse, N. Y.	Saw-filing machines	Sept. 18, 1866.
53,502	Swectland, E.	South Bend, Ind.	Grain, &c., machine for cleaning	Mar. 27, 1866.
57,995	Sweetland, J. B.	Pontiac, Mich.	Horse powers	Sept. 11, 1866.
54,440	Sweney, James	St. Louis, Mo.	Tubes, machine for bending	May 1, 1866.
59,144	Swett, Charles, assignor to Charles G. Johnson	Vicksburg, Miss.	Bale, cotton, ties	Oct. 23, 1866.
	Swift, Edward H., and Lawrence Reid. (*See* Reid & Swift.)			
	Same.			
	Same.			
	Same.			
	Same.			
	Swift, F., and S. M. Wirts. (*See* Wirts & Swift.)			
53,196	Swift, H. N.	Matteawan, N. Y.	Hat-forming machines	Mar. 13, 1866.

56, 290	Swine, P. L.	Shirleysburg, Pa.	Plants, package case for	July 10, 1866.
55, 738	Swope, Zuriel	Lancaster, Pa.	Sawing machines	June 19, 1866.
57, 996	Sykes, Chester W	Suffield, Conn.	Balloon, marine	Sept. 11, 1866.
56, 291	Sykes, William	Glenham, N. Y.	Wool, process for removing vegetable matter from	July 10, 1866.
60, 593	Sylvester, George W.	Newark, N. J.	Petroleum, filter for	Dec. 18, 1866.
54, 040	Symonds, Thomas	Portland, Maine	Wrenches	Apr. 17, 1866.
54, 082	Szerelmey, N. C.	Great Britain	Paper boards, pipes, &c., manufacture of	Apr. 17, 1866.
	Szigethy, Alexander, and Leopold Kraus. (*See* Kraus & Szigethy.)			
52, 464	Taber, Benjamin F.	Buffalo, N. Y.	Hides, process for preparing and tanning	Feb. 6, 1866.
2, 274	Taber, Wing H., assignor to self and T. R. Abbott	Lowell, Mass.	Planes, bench, carpenters' (Reissue)	June 5, 1866.
60, 651	Tabor, Byron D.	Wilson, N. Y.	Rack, sheep	Nov. 27, 1866.
53, 764	Taft, A. B., and Frank F.	Montreal, Canada	Car coupling. (Antedated March 21, 1866)	Apr. 3, 1866.
55, 932	Taft, George C.	Worcester, Mass.	Wrenches	June 26, 1866.
55, 739	Taft, George C., assignor to Thomas H. Dodge	....do	Wrenches, screw	June 19, 1866.
60, 684	Taggart, Francis	Brooklyn, N. Y.	Engines, steam, governors for	Nov. 27, 1866.
58, 505	Taggart, John	Philadelphia, Pa.	Skirt supporters	Oct. 2, 1866.
52, 251	Taggart, John, assignor to self, J. H. Lester, and Charles D. Ellis.	Roxbury, Mass.	Wood, machines for slivering	Jan. 23, 1866.
52, 936	Same	....do	Braiding machine for making three-strand braid	Feb. 27, 1866.
2, 278	Taggart, J., assignor through mesne assignments, to T. Ross, J. B. Reynolds, R. Bartlett, and A. T. Merriman.	....do	Stone, machine for channelling (Reissue)	June 5, 1866.
59, 477	Taggart, W. C.	Fayetteville, N. Y.	Washing machine	Nov. 6, 1866.
58, 913	Tagliabue, G.	New York, N. Y.	Hydrometers	Oct. 16, 1866.
	Tainter, Daniel	Worcester, Mass.	Knitting machines, rotary (Extension)	Nov. 14, 1866.
52, 090	Tait, Augustus H., and Joseph W. Avis	New York, N. Y.	Ores, apparatus for desulphurizing	Jan. 16, 1866.
53, 359	Same	....do	Distilling apparatus	Mar. 20, 1866.
58, 506	Same	....do	Steam generators	Oct. 2, 1866.
54, 229	Tait, William J.	Bergen, N. J.	Gauging rods	Apr. 24, 1866.
52, 091	Talbert, Aaron S.	Lexington, Ky.	Medical compound	Jan. 16, 1866.
59, 478	Talbott, James M.	Richmond, Va.	Press, tobacco	Nov. 6, 1866.
54, 441	Talbott, Sylvanus J.	Milford, N. H.	Planing machines	May 1, 1866.
60, 652	Same	....do	Dough mixer	Dec. 18, 1866.
59, 679	Talcott, S. C.	Ashtabula, Ohio	Button-holes for carriage curtains, elastic	Nov. 13, 1866.
56, 122	Taliaferro, C. W.	Keithsburg, Ill.	Cultivators, corn	July 3, 1866.
	Taliaferro, Nicholas, and William D. Cummings	Augusta, Ky. / Maysville, Ky.	Iron, smoothing (Extension)	Mar. 12, 1866.
53, 503	Talpey, Joseph A.	Somerville, Mass.	Stoves, cooking, attachment for	Mar. 27, 1866.
	Talpey, Joseph A., and Mellen Bray. (*See* Bray & Talpey.)			
60, 279	Tanger, D. B.	Bellefontaine, Ohio	Steam generators	Dec. 4, 1866.
56, 339	Tangye, Joseph	England	Screws, lathes for cutting	July 10, 1866.
59, 732	Tanner, A., assignor to self and Henry J. Phillips	Hoboken, N. J.	Buildings, mode of constructing	Nov. 13, 1866.
60, 085	Tanner, Charles M.	Mentor, Ohio	Scaffold	Nov. 27, 1866.
53, 056	Tanner, Warren, and Isaiah I., and John W. Hyatt, jr., assignors to Warren Tanner	Chicago, Ill. / Rockford, Ill. / Albany, N. Y.	Stone, artificial, for grinding and polishing, forming	Mar. 6, 1866.
	Tanner, Warren, and Christian Rosenberry. (*See* Rosenberry & Tanner.)			
56, 679	Tapley, J. F., and George W., assrs to selves and G. D. Tapley	Springfield, Mass	Paper-cutting machine. (Antedated February 5, 1866)	July 24, 1866.
58, 607	Taplin, John A.	Carthage Landing, N. Y.	Wood, machines for cutting	Oct. 2, 1866.
	Tarbell, Edmund. (*See* Hartford, D. Frank, assignor.)			
59, 293	Tarleton, Marcus A.	New Orleans, La.	Cotton ties	Oct. 30, 1866.
2, 428	Tarr, James G., and Augustus H. Wonson	Gloucester, Mass.	Paint for the bottom of ships (Reissue)	Dec. 18, 1866.
53, 703	Tarr, John B.	Chicago, Ill.	Curtain fixtures	Apr. 13, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,389	Tarr, John B	Chicago, Ill	Planing machines	June 5, 1866.
57,644	Tarr, John B., assignor to self and P. E. Merrihew	....do	Steel, cast, castings, machine for making	Aug. 28, 1866.
2,246	Tasker, Thomas T	Philadelphia, Pa	Hot-water apparatus, mode of regulating the temperature of. (Reissue.)	May 15, 1866.
	Tatham, William P. (*See* Fowler, Worby & Greig, assignors.)			
	Same. (*See* Fowler, Greig & Neddings, assignors.)			
	Tattershall, Richard, and Salmon E. Tyler. (*See* Tyler & Tattershall.)			
60,086	Tay, R. S., and Francis T. Fracker, ass'rs to Tucker Manufacturing Company	Medford, Mass. Cambridge, Mass.	Lamp bracket	Nov. 27, 1866.
	Taylor, A., and P. Davis. (*See* Tufts, Timothy, assignor.)			
52,906	Taylor, Alfred	Philadelphia, Pa	Fabrics, water-proof, manufacture of	Feb. 27, 1866.
	Taylor, A. E. (*See* Steele, Elbridge, assignor.)			
54,977	Taylor, Benjamin C	Dayton, Ohio	Rakes, horse	May 22, 1866.
52,907	Taylor, C. C	Springfield, Mass	Shirt-bosoms, paper	Feb. 27, 1866.
56,464	Taylor, Elmore W	Franklin, Ind	Evaporator	July 17, 1866.
	Taylor, Emma. (*See* Pike, Nicholas, assignor.)			
59,480	Taylor, Esau D	Hornellsville, N. Y.	Engines, steam, slide-valves	Nov. 6, 1866.
	Taylor, Francis D., *et al.* (*See* Kirkup, Lancelot, assignor.)			
57,997	Taylor, George	Camden, N. J	Malt-kiln floors	Sept. 11, 1866.
60,280	Taylor, George A., L. and H. L. Crandall, and J. Larkin	Hopkinton, R. I	Twine and small cordage, machine for making	Dec. 4, 1866.
53,197	Taylor, George B	New York, N. Y	Neck ties	Mar. 13, 1866.
	Taylor, H. B., and M. C. Bogia. (*See* Bogia & Taylor.)			
54,978	Taylor, H. K., and D. M. Graham	Cleveland, Ohio	Oils, treating	May 22, 1866.
59,751	Same	....do	Oils, hydrocarbon, treating	Nov. 20, 1866.
52,621	Taylor, H. L	Fredonia, N. Y	Pole and thill coupling	Feb. 13, 1866.
	Same. (*See* Holland, Charles W., assignor.)			
58,353	Taylor, H. L., assignor to self and Charles W. Daniels	Fredonia, N. Y	Thills, shifting cutter	Sept. 25, 1866.
60,281	Taylor, Henry R	Roxbury, Mass	Refrigerator	Dec. 4, 1866.
57,988	Taylor, J., and R. M. Lafferty	Three Rivers, Mich	Broom head	Sept. 11, 1866.
2,311	Taylor, John	Philadelphia, Pa	Hood, ladies', (Design)	May 8, 1866.
	Taylor, J. E. (*See* Knight, Luke L., assignor.)			
58,508	Taylor, John S. P	Oxford, Ohio	Skiver lap	Oct. 2, 1866.
	Taylor, J. W., *et al.* (*See* Nelson, Charles, assignor.)			
60,087	Taylor, J. W., jr	Dubuque, Iowa	Curtain fixture	Nov. 27, 1866.
56,634	Taylor, L	Jordan, Wis	Water elevators	July 24, 1866.
52,622	Taylor, Lemuel and Minor, and Edwin Cox	....do	Beehives	Feb. 13, 1866.
56,830	Taylor, Mary A	Cincinnati, Ohio	Boilers, wash	July 31, 1866.
55,390	Taylor, Peter, and William A. Gove	Pawtucket, R. I. Charlestown, Mass.	Bed bottom	June 5, 1866.
57,406	Taylor, Richard Henry	Goose Creek, Va	Hominy machines	Aug. 21, 1866.
58,696	Taylor, Samuel	Burlington, Maine	Beehives	Oct. 9, 1866.
52,339	Taylor, S	Worcester, Mass.	Organs and melodeons, knee swell for	Jan. 30, 1866.
52,623	Taylor, Simeon	....do	Organs and melodeons	Feb. 13, 1866.
52,908	Taylor, Simeon N	Horicon, Wis	Joint knuckle	Feb. 27, 1866.

56,635	Taylor, Thomas	Washington, D. C	Oxide of lead, reducing	July 24, 1866.
53,929	Taylor, Thomas, assignor to Samuel C. Ridgaway and John Fox.	Baltimore, Md	Harvester rakes	Apr. 10, 1866.
52,909	Taylor, T. C	Philadelphia, Pa	Vessels, air-tight, constructing. (Antedated February 16, 1866).	Feb. 27, 1866.
52,465	Taylor, T. Chalkley	....do.	Alkali, caustic, putting up	Feb. 6, 1866.
52,466	Same	....do.	Potassa and soda, caustic, putting up and treating. (Antedated January 26, 1866.)	Feb. 6, 1866.
52,910	Same	....do.	Alkali, caustic, method of putting up	Feb. 27, 1866.
	Taylor, V. N., and G. W. Ray. (*See* Curtis, Theodore A., assr.)			
55,740	Taylor, William B. S	New York, N. Y	Tubing, flexible, manufacture of	June 19, 1866.
57,407	Taylor, W. H	Pittsburg, Pa	Screen and weighing device, combined	Aug. 21, 1866.
59,094	Taylor, William W	Newark, N. J	Stitching clamp	Oct. 23, 1866.
52,467	Teal, Daniel E	Norwich, N. Y	Churns	Feb. 6, 1866.
	Teal, James, and John Petrie, jr. (*See* Petrie & Teal.)			
59,680	Tebbetts, Temple	New York, N. Y	Collar paper, apparatus for creasing	Nov. 13, 1866.
52,225	Tedford, Joseph	Hardford, Iowa	Drill, seed, combined	Jan. 23, 1866.
59,872	Teeter, Lewis W	Hagerstown, Ind	Flour packers	Apr. 24, 1866.
	Telford, J., *et al.* (*See* Locke, Warrington, Carrett, Marshall & Telford.)			
52,770	Teller, G. C	Terre Haute, Ind	Cultivators	Feb. 20, 1866.
60,282	Tellgmann, Ferdinand, assignor to E. Fox and W. L. Smith	Stamford, Conn	Tobacco pipe	Dec. 4, 1866.
52,624	Tempest, J. R	Philadelphia, Pa	Skate	Feb. 13, 1866.
55,964	Temple, James, assignor to self, John Schock, and H. E. Miller	Selin's Grove, Pa	Car brakes	June 26, 1866.
	Tenney, Alfred E. (*See* Tobey, James H., assignor.)			
54,623	Terrel, Timothy	Spring Hill, Ohio	Ploughs, shovel	May 8, 1866.
57,215	Same	....do.	Lamp, lard	Aug. 14, 1866.
57,216	Same	....do.	Plough cleaning attachment	Aug. 14, 1866.
	Terrell, Minot, jr., *et al.* (*See* Bradford, Charles K., assignor.)			
57,408	Terry, Daniel	Wakeman, Ohio	Fences	Aug. 21, 1866.
59,873	Terry, Fayette F	Port Gibson, N. Y	Gates, farm	Nov. 20, 1866.
55,741	Terry, John B	Auburndale, Mass.	Air, apparatus for carburetting	June 19, 1866.
57,645	Terry, T. W., assignor to self and George W. Hoff	Baltimore, Md	Pockets, watch, safety	Aug. 28, 1866.
56,680	Terwilliger, William and William N., and John S. Lockwood	New York, N. Y.	Iron and steel, method of uniting	July 24, 1866.
56,336	Testman, Charles F	Portland, Oregon	Gold separator	July 24, 1866.
52,092	Tevis, E. Laurence	Philadelphia, Pa.	Corn sheller for table use	Jan. 16, 1866.
	Tevis, J. B., and Charles B. Rees. (*See* Rees & Tevis.)			
59,010	Tewksbury, A. J	Haverhill, Mass	Sewing machines, pressure foot of	Aug. 7, 1866.
	Tewksbury, W. D., and Isaac Smith. (*See* Smith & Tewksbury.)			
	Thain, Richard S. (*See* Guernsey, Samuel B., assignor.)			
	Thatcher, John M	New York, N. Y	Stoves, air-heating (Extension)	Mar. 22, 1866.
2,256	Thatcher, Thomas	Danville, Pa	Engine, direct-action (Reissue)	May 22, 1866.
52,911	Thatford, Charles H	Jamaica, N. Y.	Presses, baling	Feb. 27, 1866.
53,198	Thayer, D. H	Ludlowville, N. Y	Reaping and mowing machines	Mar. 13, 1866.
	Thayer, G. L. (*See* Trask & Johnson, assignors.)			
58,509	Theat, John	Detroit, Mich	Tuyeres	Oct. 2, 1866.
	Therasson, L. F, *et al.* (*See* Krom, S. R., assignor.)			
	Same.			
52,505	Thewer, F. Robert, assignor to Charles Rubens & Co	Switzerland	Watches, self-winding	Feb. 6, 1866.
	Thillman, George. (*See* Wade, Alexander C., assignor.)			
	Same.			
	Thirg, François, and James Easton, jr. (*See* Easton & Thirg.)			
52,468	Thoman, Kathrin	Cleveland, Ohio	Canteen and lunch box	Feb. 6, 1866.
53,058	Thomas, Alfred	Worcester, Mass	Lathes, device for securing the tail-stock of	Mar. 6, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Thomas, Calvin F. S., *et al.* (*See* Rollins, J. A., ass'r.) Reissue.			
56,637	Thomas, Daniel M.	Dowagiac, Mich.	Pumps	July 24, 1866.
54,230	Thomas, Edwin A.	Philadelphia, Pa.	Alkali, caustic, cans for	Apr. 24, 1866.
53,899	Thomas, Enoch K., and Hans H. Andresen	Rock Island, Ill. / Davenport, Iowa.	Planes for making blind slats	Apr. 10, 1866.
53,360	Thomas, G. C.	Brooklyn, N. Y.	Baggage checks	Mar. 20, 1866.
55,554	Thomas, Joseph C.	Kennebunk, Maine	Clamps, planking	June 12, 1866.
52,093	Thomas, J. H., and P. P. Mast	Springfield, Ohio	Cultivators	Jan. 16, 1866.
55,742	Same	do.	Drill, grain	June 9, 1866.
53,704	Thomas, Levi H.	Waterbury, Vt.	Mop head	Apr. 3, 1866.
	Thomas, Levi H., and George J. Colly. (*See* Colly & Thomas.)			
55,391	Thomas, Nicholas	Chicago, Ill.	Tool for cutting off boiler tubes	June 5, 1866.
57,217	Thomas, N. Spencer	Painted Post, N. Y.	Extracts, process for making	Aug. 14, 1866.
57,218	Same	do.	Extracting tanning matter from bark, apparatus for	Aug. 14, 1866.
57,219	Same	do.	Composition for removing incrustation from boilers	Aug. 14, 1866.
57,011	Thomas, R. A.	Damascus, Cal.	Drilling machine	Aug. 7, 1866.
	Thomas, Robert W., and William H. Allard. (*See* Allard & Thomas.)			
	Thomas. S., *et al.* (*See* Shalters & Catern, assignors.)			
	Thomas, Samuel T., and Edward Everett, deceased, by Eliza A Adams, adm'x.	Laconia, N. H. / Lawrence, Mass	Looms, jacquard, pattern guards for (Extension)	Mar. 9, 1866.
60,438	Thomas, William, and William Rhoades	Mukwonago, Wis.	Press, cheese	Dec. 11, 1866.
59,681	Thomason, Henry	Lafayette, Ind.	Seeding machines	Nov. 13, 1866.
54,231	Thomasson, Power	Neoga, Ill.	Evaporator	Apr. 24, 1866.
58,319	Thompson, Andrew	Ottumwa, Iowa	Cultivators, rotary	Sept. 25, 1866.
52,771	Thompson, Artemas A.	Brooklyn, N. Y.	Organ, reed mechanism for operating the swell of	Feb. 20, 1866.
55,023	Thompson, Augustus J., assignor to self and A. B. Lincoln	Malden, Mass.	Sewing machines, covers for	May 22, 1866.
56,831	Thompson, Charles Wesley	Batavia, Ill.	Trusses	July 31, 1866.
	Thompson, David. (*See* Drake, Mahlon S., assignor.)			
55,933	Thompson, D. S	West Haven, Conn.	Buckles	June 26, 1866.
	Same. (*See* Hyde, James C., assignor.)			
	Thompson, Edgar L. (*See* Packer & Daley, assignors.)			
52,469	Thompson, George E.	New Haven, Conn.	Fastener, door	Feb. 6, 1866.
60,088	Thompson, G. L.	New York, N. Y.	Hats, machine for pressing	Nov. 27, 1866.
	Thompson, George W. (*See* Checkens, Dominico, assignor.)			
57,796	Thompson, George W.	Ripley, Ohio	Ploughs	Sept. 4, 1866.
55,024	Thompson, Henry, assignor to self and D. C. and C. H. Haskell	Rockland, Maine	Harrows, rotary	May 22, 1866.
59,789	Same	do.	Rigging stopper	June 19, 1866.
60,089	Thompson, Henry Alderson	Victoria, Conn.	Ores, table for concentrating	Nov. 27, 1866.
2,389	Thompson, Henry G., assignor to the Hartford Carpet Company	New York, N. Y.	Carpet pattern (Design)	Aug. 14, 1866.
2,390	Same	do	Carpet pattern (Design)	Aug. 14, 1866.
2,391	Same	do	Carpet pattern (Design)	Aug. 14, 1866.
2,392	Same	do	Carpet pattern (Design)	Aug. 14, 1866.
2,393	Same	do	Carpet pattern (Design)	Aug. 14, 1866.
2,394	Same	do	Carpet pattern (Design)	Aug. 14, 1866.

2,395	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,396	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,397	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,398	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,399	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,400	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,401	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,402	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,403	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,404	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,405	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,406	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,407	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,408	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,409	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,410	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,411	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,412	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,413	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,414	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,415	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,416	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,417	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,418	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,419	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,420	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,421	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,422	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,423	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,424	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,425	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
2,426	Same	....do	Carpet pattern (Design)	Aug. 14, 1866.
55,392	Thompson, Horace A	Hartford, Conn	Bell, call	June 5, 1866.
	Thompson, I. and R. B., *et al.* (*See* Wheeler, S. H., *et al.*)			
53,361	Thompson, J. B	New York, N. Y	Desiccating eggs, &c., apparatus for	Mar. 20, 1866.
58,037	Thompson, Jacob B	England	Iron and steel with gold, silver, &c., coating	Sept. 11, 1866.
52,498	Thompson, James M., and S. D. Tripp, assignors to S. D. Tripp	Stoneham, Mass / Lynn, Mass	Heel polishing machine	Feb. 6, 1866.
52,499	Same	....do	Heel polishing machine	Feb. 6, 1866.
54,794	Thompson, John	Williamsburg, N. Y	Fence, portable	May 15, 1866.
52,772	Thompson, John S	Glen's Falls, N. Y	Barrel-head machine	Feb. 20, 1866.
	Thompson, Josiah B. (*See* Darker, William, assignor.)			
	Thompson, J. M., 2d. (*See* Holt, G. L., assignor.)			
57,999	Thompson, J. P	Kirkville, Iowa	Roofing, composition for	Sept. 11, 1866.
59,682	Same	....do	Roofing, composition for	Nov. 13, 1866.
58,510	Thompson, J. Patton	Philadelphia, Pa	Baby jumper	Oct. 2, 1866.
59,321	Thompson, J. W., assignor to self and H. Barnaby	Salem, Ohio	Cherry stoner	Oct. 30, 1866.
	Thompson, Lafayette F., dec'd, by George O. Way, adm'r, and Asahel G. Batchelder	Claremont, Minn / Lowell, Mass	Car brakes, railroad (Extension)	July 5, 1866.
	Thompson, Macklot, and Pierre A. Berthold. (*See* Berthold & Thompson.) Design.			
60,283	Thompson, Nathan	England	Bottle stopper	Dec. 4, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
58,564	Thompson, Robert W	Great Britain	Steam generators	Oct. 2, 1866.
60,090	Thompson, Samuel R	Portsmouth, N. H	Crucibles, machines for making	Nov. 27, 1866.
59,479	Thompson, Thomas G	Oswego, N. Y	Horseshoes, tool for making	Nov. 6, 1866.
52,943	Thompson, William	Ireland	Compound, for fining, purifying, and mellowing spirituous liquors.	Feb. 27, 1866.
53,504	Thompson, William	Cleveland, Ohio	Air, apparatus for carburetting	Mar. 27, 1866.
	Thomson, Alfred. (*See* Higgins, Francis H., assignor.)			
55,030	Thomson, Robert W	Scotland	Motive power, apparatus for obtaining	May 22, 1866.
53,384	Thomson, Samuel, George Smith, and John S. Jennings, assignors through mesne assignments to John Pfeifer.	Brooklyn, N. Y	Coal hod	Mar. 20, 1866.
	Thomson, S. B., *et al.* (*See* Champlin, J. F., assignor.)			
58,152	Thorn, Royal H	Syracuse, N. Y	Chucks	Sept. 18, 1866.
57,220	Thorn, Thomas J., and Jonathan Dennis, jr	Skaneateles, N. Y Washington, D. C	Faucets	Aug. 14, 1866.
52,340	Thorne, Thomas J	Skaneateles, N. Y	Churns	Jan. 30, 1866.
	Thornly, Orion, and William Love. (*See* Love & Thornley.)			
53,386	Thornton, Henry	England	Knitting machine	Mar. 20, 1866.
55,444	Thornton, John and William	....do	Knitting machine	June 5, 1866.
56,638	Thornton, W. McK	Clinton, Wis	Buckle, trace	July 24, 1866.
56,465	Thorp, Alexander L	Vandalia, Mich	Fence, picket, portable	July 17, 1866.
	Thorp, E. A. (*See* Beach, Burroughs, assignor.)			
2,362	Thorp, James P., assignor to H. D. and G. F. Smith, and Edward W. Twichell.	Plantsville, Conn	Wagon shaft shackle (Reissue)	Sept. 18, 1866.
53,900	Thorpe, T. P	New York, N. Y	Exercising machine	Apr. 10, 1866.
52,773	Thrall, Henry C	Springfield, Mass	Wind wheels	Feb. 20, 1866.
52,341	Thrasher, John	West Liberty, Ohio	Wagon wheels	Jan. 30, 1866.
54,624	Thresher, David C	Freetown, Mass	Gun-stock and barrel attachment	May 8, 1866.
54,442	Thurston, Robert H	Providence, R. I	Lamps, magnesium	May 1, 1866.
55,393	Same	....do	Lamps, magnesium. (Antedated January 4, 1866)	June 5, 1866.
56,123	Thyng, J. Warren	Salem, Mass	Printing presses, paper gauge for	July 3, 1866.
55,743	Tibbals, William	South Coventry, Conn	Fire-arms, revolving	June 9, 1866.
56,466	Same	....do	Fire-arms, revolving	July 17, 1866.
59,874	Tibbets, Jonathan S	Terre Haute, Iowa	Pulleys	Nov. 20, 1866.
60,091	Tice, William W	California, Ohio	Clamps, moulders	Nov. 27, 1866.
56,866	Tickler, William E., and E. T., and Daniel M. Marshall	Pierceton, Ind	Car coupling	July 31, 1866.
53,901	Tiensch, A	Memphis, Tenn	Cotton-picking machine	Apr. 10, 1866.
57,012	Tier, George H	Frémont, Ohio	Boat, life	Aug. 7, 1866.
54,041	Tiffany, Asa Scott, and Albert Lucien Wilson	Scott County, Iowa Rock Island County, Ill	Vinegar, apparatus for the manufacture of	Apr. 17, 1866.
56,502	Tiffany, D. B., assignor to self and Robert E. Richardson	Xenia, Ohio	Wells, boring and laying pipes	July 17, 1866.
56,832	Tiffany, Joel	Albany, N. Y	Paper stock, process for the manufacture of	July 31, 1866.
56,833	Tiffany, Joel, and Harrison B. Meech	Albany, N. Y Fort Edward, N. Y	Bleaching paper stock	July 31, 1866.
	Tiffany, J. M., and John H. Chase. (*See* Chase & Tiffany.)			
58,000	Tift, G. H	Morrisville, Vt	Meat mangler	Sept. 11, 1866.

58,914	Tift, S. H	....do	Bedstead, spring	Oct. 16, 1866.
51,881	Tilden, Howard	Boston, Mass	Sifter, flour	Jan. 2, 1866.
55,177	Same	... do	Tobacco-cutter and nut-cracker	May 29, 1866.
55,394	Same	....do	Broom clasp	June 5, 1866.
	Same. (*See* Robinson, Daniel T., assignor.)			
	Same. (*See* Robinson, Alexander M., assignor.)			
		Sandusky, Ohio	Nuts	July 3, 1866.
56,124	Till, Levi	West Troy, N. Y	Water elevators	Mar. 27, 1866.
53,505	Tilley, John	Dayton, Ohio	Composing stick. (Antedated May 7, 1866)	May 22, 1866.
54,979	Tillinghast, William T.			
	Tillotsen, E. N., and R. H. Dewey. (*See* Dewey & Tillotsen.)			
		LeRoy, N. Y	Churns	June 26, 1866.
55,934	Tillou, W. H., and S. Shumway	New Bedford, Mass	Clothes pole	June 19, 1866.
55,744	Tilton, Francis W	New York, N. Y	Preserving and curing meat, method of	Oct. 2, 1866.
58,511	Tilton, John			
	Tilton, J. C. (*See* Andrews, J. K., assignor.)			
	Same.			
	Tilton, Wheelock. (*See* Proctor, Milo J., assignor.)			
		....do	Banjos	Apr. 24, 1866.
54,264	Tilton, William B., assignor to W. Nash	Amsterdam, N. Y	Burial cases, air-tight	June 12, 1866.
55,555	Timmerman, Charles	Philadelphia, Pa	Furnace, Timmins's	Mar. 20, 1866.
53,362	Timmins, Stephen	Lafayette, Ind	Bottle stoppers	Sept. 18, 1866.
58,153	Timmons, Samuel H	....do	Bottle stopper and medicine gauge	Nov. 20, 1866.
59,875	Same	....do	Car brakes	Dec. 4, 1866.
60,284	Same	Providence, R. I	Furnaces, hot-air, regulator for	Oct. 30, 1866.
59,294	Tingley, Albert H	Pawtucket, R. I	Bed bottom, spring	May 1, 1866.
54,443	Tingley, Lyman L	Cincinnati, Ohio	Lamp chimney attachment	Oct. 16, 1866.
58,915	Tinkey, Frederick John	New Haven, Conn	Door guard	Oct. 16, 1866.
58,916	Tinkey, John	Burlington, Mass	Gas apparatus	June 5, 1866.
55,395	Tirrell, Oakes			
	Titcomb, David A. (*See* Bellamy, John H., assignor.) Design.			
	Same.			
	Same.			
	Same.			
		Albany, N. Y	Diggers, potato	Mar. 20, 1866.
53,363	Tittle, Daniel J	....do	Harvesters, corn	Sept. 25, 1866.
58,320	Same	....do	Car coupling	Oct. 30, 1866.
60,092	Same	Watertown, N. Y	Signal lights, railroad	Dec. 18, 1866.
60,594	Tobey, Elisha H	Cranston, R. I	Swaging machine	June 19, 1866.
55,790	Tobey, James H., assignor to self and Alfred E. Tenney	Boston, Mass	Scissors sharpener	Nov. 20, 1866.
59,785	Tobey, James J	Pultneyville, N. Y	Sheep, stamp for marking	Dec. 11, 1866.
60,439	Todd, Asahel, jr	Chicago, Ill	Pumps, railroad station	July 17, 1866.
56,467	Todd, A. W	Reading, Pa	Fans, ladies'	Aug. 28, 1866.
57,598	Todd, Billy	New York, N. Y	Paddle wheel	July 31, 1866.
56,834	Todd, C. A	Fayette, Pa	Sand, mode of washing	Nov. 6, 1866.
59,481	Todd, James, and Albert G. Downer	Middletown, Conn	Bed bottom	Jan. 9, 1866.
51,981	Todd, Joel E	....do	Artists' stretchers	Sept. 18, 1866.
58,154	Same			
	Todd, Paul P. (*See* Fogerty, Valentine, assignor.)			
		Boston, Mass	Locks	Jan. 23, 1866.
52,226	Toll, Charles F	Canastota, N. Y	Optical instruments, binocular eye-pieces for	July 3, 1866.
56,125	Tolles, Robert B	Lyons, N. Y	Bed bottom	Jan. 2, 1866.
51,882	Tomb, Asa M	United States Army	Stretchers	Aug. 7, 1866.
57,013	Tompkins, Charles H	Troy, N. Y	Harvesters	Mar. 6, 1866.
53,057	Tompkins, Clark			
	Same. (*See* Lessels, John, assignor.)			
	Same. (*See* Brockway, Henry, assignor.) Reissue.			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,342	Tompkins, Samuel E	Newark, N. J	Saddle-tree	Jan. 30, 1866.
60,285	Tomppert, Phil., jr	Louisville, Ky	Book-mark holder	Dec. 4, 1866.
56,868	Tonnar, A., assignor to S. Drey and M. Rosenheim	Prussia	Drying and cleaning grain, &c., machine for	July 31, 1866.
52,343	Toof, Edwin J	Fort Madison, Wis	Paper-holder	Jan. 30, 1866.
53,199	Topliff, Cyrus L	New York, N. Y	Pins, device for feeding	Mar. 13, 1866.
55,745	Same	do	Lamp wicks	June 19, 1866.
52,094	Topliff, John A., and Thomas Tunnington	Elyria, Ohio	Wire, woven, mode of manufacturing articles of	Jan. 16, 1866.
56,126	{ Topping, Howell, and { Merritt Gally	Marion, N. Y. Auburn, N. Y.	Lamps, fixture for ratchet wheel for	July 3, 1866.
	Torbert, J. P. (*See* Peyton, Joseph I., assignor.)			
59,876	Torrence, A. P	Columbus, Ga	Treadles	Nov. 20, 1866.
56,639	Torrence, C. C	Ripley, Ohio	Valves, throttle, lock for securing	July 24, 1866.
60,595	Torrey, R. S	Bangor, Maine	Drills for rocks, wells, &c	Dec. 18, 1866.
56,292	Torrey, William A	Mont Clair, N. J	Belting, hose, &c., manufacture of	July 10, 1866.
	Toshach, William, and Richard Vose. (*See* Vose & Toshach.)			
	Totten, Robert C. (*See* Foster, Charles, assignor.)			
	Same. (*See* Lewis, James C., assignor.)			
59,095	Totten, Lineus E	Brooklyn, N. Y	Needles, wrappers for. (Antedated October 7, 1866)	Oct. 23, 1866.
54,444	Towers, William H	New York, N. Y	Barrel, flour. (Antedated April 21, 1866)	May 1, 1866.
57,409	Same	do	Hides, raw, for the manufacture of various articles, process of preparing.	Aug. 21, 1866.
	Towle, George P. (*See* Guilmette, C. A., assignor.)			
55,178	Towle, Hamilton E	do	Oil floating from streams, apparatus for collecting	May 29, 1866.
54,625	Town, Edward	Washington, D. C	Gins, cotton	May 8, 1866.
	Towne, W. J., *et al.* (*See* Bazin, James A., assignor.)			
59,877	Towne, Elson	Morland's Grove, Ill	Governors, vibrating	Nov. 20, 1866.
53,200	Townsend, Elmer	Boston, Mass	Peg-rasper	Mar. 13, 1866.
	Same. (*See* Reed, Timothy K., assignor.)			
	Same. (*See* Reed, Andrew A., assignor.)			
	Townsend, Elmer. (*See* Roper, S. H., assignor.)			
	Same. (*See* Keith, Jeremiah, assignor.) Reissue.			
60,569	Townsend, G. G	Rochester, N. Y	Shoe-peg float	Dec. 18, 1866.
	Townsend, I., *et al.* (*See* Winter, William, assignor.)			
	Townsend, Isaac, *et al.* (*See* Smiley, Becher & Townsend.)			
58,697	Tozier, Henry A	Littleton, Maine	Beehives	Oct. 9, 1866.
55,746	Trageser, John	New York, N. Y	Beer, alcohol, &c., apparatus for cooling and condensing	June 19, 1866.
55,747	Trageser, J., and J. G. Schriber	do	Brewers' boilers, coils for	June 19, 1866.
	Trainbam, William H. (*See* Bragg, W. N., assignor.)			
59,322	Traphagan, George W., assignor to self and A. M. Decker	Glen's Falls, N. Y	Carriage tops, station	Oct. 30, 1866.
52,798	Trask, Charles H., and J. B. Johnson, assignors to selves and G. L. Thayer.	Lynn, Mass	Boots and shoes	Feb. 20, 1866.
53,705	Trask, Samuel I	Guilford, N. Y	Clothes dryer	Apr. 3, 1866.
2,330	Travis, James T., assignor to Mitchell, Vance & Company	New York, N. Y	Chandelier (Design)	May 29, 1866.
52,651	Travis, John E., assignor to self and Elon Francisco	Greenville, Ill	Ploughs, gang	Feb. 13, 1866.
55,556	Traxler, Franklin	Scottsburg, N. Y	Churns, dog	May 15, 1866.

	Traxter, S. B., *et al.* (*See* Baxendale, Samuel, assignor.)			
58,321	Treadwell, N.	New York, N. Y.	Gas on steamboats and other vessels, apparatus for supplying	Sept. 25, 1866.
53,059	Treadwell, W. B.	Albany, N. Y.	Grate and grate bars	Mar. 6, 1866.
57,014	Trenor, Henry H.	New York, N. Y.	Car coupling	Aug. 7, 1866.
57,015	Same	do.	Car brake	Aug. 7, 1866.
59,096	Trent, Joseph	Millerton, N. Y.	Valves, steam, balance	Oct. 23, 1866.
	Trested, R. H., *et al.* (*See* Kendall, John L., assignor.)			
55,179	Trimmer, B. T.	Rochester, N. Y.	Grain cleaner and separator	May 29, 1866.
52,470	Tripp, S. D.	Lynn, Mass	Heel-polishing machine	Feb. 6, 1866.
	Tripp, S. D., and James M. Thompson. (*See* Thompson & Tripp.)			
	Same.			
53,902	Tripp, Thomas	Chicago, Ill.	Propeller wheel	Apr. 10, 1866.
54,074	Tripp, Thomas, assignor to self, George S. Curtis, E. G. L. Faxon, and H. S. Dodge.	Chicago, Ill.	Amalgamator	Apr. 17, 1866.
54,075	Tripp, Thomas, and George S. Curtis, assignors to selves, E. G. L. Faxon, and H. S. Dodge.	do.	Amalgamator	Apr. 17, 1866.
54,076	Same	do.	Amalgamator	Apr. 17, 1866.
	Trott, A. P., *et al.* (*See* Marden, Samuel, assignor.)			
59,683	Trout, David S	Arcola, Ill.	Wheelwrighting machines	Nov. 13, 1866.
53,545	Trowbridge, John H., assignor to self and Daniel Fuller	New Haven, Conn.	Irons, soldering	May 29, 1866.
55,396	Trowbridge, William S.	Milwaukee, Wis.	Transit instruments	June 5, 1866.
	Truax, John K., and John T. Ackley. (*See* Ackley & Truax.)			
51,903	Truesdale, Charles, assignor to self and Wm. Resor & Co.	Cincinnati, Ohio	Moulders' clamp	Jan. 2, 1866.
54,470	Same	do	Furnace, cupola	May 1, 1866.
60,440	Same	do.	Furnace, cupola	Dec. 11, 1866.
56,640	Trumbull, Harvey	Central College, Ohio	Broom head	July 24, 1866.
59,482	Trunick, W. B.	Pittsburg, Pa.	Wells, boring tool for	Nov. 6, 1866.
57,221	Tschirgi, Matthew, and Louis Kanrmuller	Dubuque, Iowa	Beer cooler	Aug. 14, 1866.
52,912	Tucker, Alvah	Gilford, N. H.	Bolt-heading machine	Feb. 27, 1866.
55,397	Tucker, Cyrus	La Crosse, Wis.	Locks, till	June 5, 1866.
	Tucker, Erasmus. (*See* McFishback, William, assignor.)			
53,706	Tucker, Erwin W.	Lowell, Mich.	Bed bottom	Apr. 3, 1866.
55,591	Tucker, F. O. and William W., assignors to selves and N. C. Stiles	Meriden, Conn.	Tops, toy	June 12, 1866.
2,355	Tucker, Hiram, assignor to the Tucker Manufacturing Company	Boston, Mass.	Iron, process of bronzing or coloring (Division A, reissue)	Sept. 11, 1866.
2,356	Same	do.	Iron in imitation of bronze, manufacture of (Div. B, reissue)	Sept. 11, 1866.
59,674	Same	Newton, Mass.	Cores, venting, for foundry purposes	Nov. 13, 1866.
56,835	Tucker, Jesse	Adrian, Mich.	Water wheels	July 31, 1866.
55,557	Tucker, John P.	South Reading, Mass.	Elevator, coal	June 12, 1866.
56,641	Tucker, Joseph C.	San Francisco, Cal.	Sewing machines	July 24, 1866.
	Tucker Manufacturing Company. (*See* Fracker, Francis T., assignor.) Design.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same.			
	Same. (*See* Tay & Fracker, assignors.)			
53,904	Tufts, Otis	Boston, Mass.	Hoisting apparatus, steam	Apr. 10, 1866.
60,441	Same	do.	Elevators	Dec. 11, 1866.
60,442	Same	do.	Elevators	Dec. 11, 1866.

List of patentees of inventions, designs, and reissues 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
60,443	Tufts, Otis	Boston, Mass.	Elevator guides	Dec. 11, 1866.
60,444	Same	....do.	Oiling bodies rotating around shafts, means for	Dec. 11, 1866.
54,232	Tufts, Timothy, assignor to P. Davis and A. Taylor	Somerville, Mass.	Tree protector	Apr. 24, 1866.
58,001	Tully, Andrew R.	New York, N. Y.	Wagon tops	Sept. 11, 1866.
56,468	Tully, F. W., and T. Reece	Philadelphia, Pa.	Pumps	July 17, 1866.
57,416	Tully, Thomas	Litchfield, Ill.	Tire-shrinking machines	Aug. 21, 1866.
	Tunnington, Thomas, and John A. Topliff. (*See* Topliff & Tunnington.			
53,903	Tupper, George O.	New York, N. Y.	Grate bar	Apr. 10, 1866.
52,913	Tupper, Lorenzo B.	....do.	Grate bar	Feb. 27, 1866.
57,411	Same	....do.	Grate bar	Aug. 21, 1866.
55,558	Turnbull, Andrew	New Britain, Conn.	Bell, house	June 12, 1866.
	Turnbull, David B. (*See* Brown, Calvin M., assignor.)			
	Same. (*See* Miles, Oren E., assignor.)			
58,002	Turnbull, William C.	New York, N. Y.	Gas, machine for purifying	Sept. 11 1866.
	Turner & Clark Manufacturing Company. (*See* Brooks, Heman P., assignor.)			
	Same. (*See* Hopson & Brooks, assignors.)			
	Turner, A. (*See* Montignani, John O., assignor.)			
52,344	Turner, Alfred W.	New York, N. Y.	Bell, table or call. (Antedated January 22, 1866)	Jan. 30, 1866.
54,824	Turner, Edward A., assignor to self and John A. Leggat	....do.	Steering apparatus	May 15, 1866.
	Turner, Elisha. (*See* Adt, John, assignor.)			
59,731	Turner, John, assignor to self and John G. Hunter	Richmond, Va.	Nut boxes, adjustable	Nov. 13, 1866.
	Turner, L. W. (*See* Wooding, Henry C., assignor.)			
53,707	Turner, Reuben D.	New York, N. Y.	Engines, steam, slide valves for	Apr. 3, 1866.
	Turner, R. G. (*See* Allard, Isaac, assignor.)			
	Turner, R. W. (*See* Clapp, Perez C., assignor.)			
54,270	Turner, William, Samuel Shore, and William Halliwell	England	Carding machines, cards for	Apr. 24, 1866.
52,345	Turney, Austin M.	Butternuts, N. Y.	Composition for destroying insects	Jan. 30, 1866.
59,737	Turney, G. L., assignor to Samuel Harshaw	England	Needle cases	Nov. 13, 1866.
56,836	Turrell, L. W., Samuel Stanton, and L. C. Ward	Newburg, N. Y.	Gas pipes, safety attachment for. (Antedated May 7, 1866)	July 31, 1866.
	Tuttle, C. B., and G. W. Peabody. (*See* Davis & Peabody, assignors.)			
59,483	Tuttle, Daniel	Plantsville, Conn.	Trace lock	Nov. 6, 1866.
	Tuttle, S. D., and Thomas N. Hill. (*See* Hill & Tuttle.)			
60,286	Tuttle, Simeon P.	Decatur, Mich.	Fence	Dec. 4, 1866.
58,003	Tuttle, William, jr.	Dowagiac, Mich.	Fence	Sept. 11, 1866.
57,016	Tweddle, H. W. C.	Pittsburg, Pa.	Barrels, composition for lining	Aug. 7, 1866.
59,097	Same	Allegheny, Pa.	Barrel hoops	Oct. 23, 1866.
2,404	Same	Pittsburg, Pa.	Oil, coal, and other substances, apparatus for distilling (Reissue)	Nov. 27, 1866.
	Tweddle, H. W. C., and James Adair. (*See* Adair & Tweddle.)			
	Twichell, Edward W., *et al.* (*See* Thorp, James P., assignor.)			
55,935	Twing, E. W.	Springfield, Mass.	Carpet stretcher	June 26, 1866.
53,506	Tyler, Charles N.	Buffalo, N. Y.	Lamps	Mar. 27, 1866.
53,060	Tyler, Emma A.	....do.	Hair-crimping pins	Mar. 6, 1866.

52,625	Tyler, John	West Lebanon, N. H.	Water wheels, turbine	Feb. 13, 1866.
53,752	Tyler, Salmon E., and Richard Tattershall, assignors to selves and Jackson Simons.	Beloit, Wis.	Planters, corn, hand	Apr. 3, 1866.
58,181	Tyler, Sidney M., assignor to the Empire Sewing Machine Co.	Brooklyn, N. Y.	Sewing machine	Sept. 18, 1866.
58,182	Same	do	Sewing machine shuttles	Sept. 18, 1866.
57,222	Tyson, J. W	Lower Providence, Pa.	Cultivators	Aug. 14, 1866.
57,270	Uhlig, Carl F., assignor to George F. W. Pabst	Saxony	Harmonium	Aug. 14, 1866.
	Ulmer, William A. (*See* Moriarty, Matthew, assignor.)			
	Ulrich, Michael, and Joseph Cantner. (*See* Cantner & Ulrich.)			
57,797	Underhill, George Freeman	New York, N. Y.	Drilling machine, rock	Sept. 4, 1866.
58,004	Underwood, Henry	do	Belting, lap joint for	Sept. 11, 1866.
58,917	Ungerer, Jacob	Brooklyn, N. Y.	Chair	Oct. 16, 1866.
	Union Paper Collar Company. (*See* Hunt, Walter, assignor.)			
	Reissue.			
	Same.			
	Union Seamless Knitting Machine Company. (*See* Wilson, James G., assignor.)			
	Same.			
	Union Steam Mill Company. (*See* Freudenaw, William, assignor.)			
	Design.			
	Same.			
	Union Sugar Refinery. (*See* Jasper, Gustavus A., assignor.)			
	United States Button Company. (*See* Robinson, E. A., assignor.)			
	United States Mining and Ore Decomposing Company. (*See* Mason, Melchor B., assignor.)			
52,626	Unverzagt, Clemens	Richmond, Ind	Looms, hand	Feb. 13, 1866.
54,445	Same	do	Looms, shuttles and bobbins for. (Antedated April 30, 1866)	May 1, 1866.
	Upham, James P., *et al.* (*See* Fuller Jim B., assignor.)			
	Same. (*See* Walker, Andrew, assignor.)			
54,042	Upson, Alvah	Randolph, Ohio	Planters, corn	Apr. 17, 1866.
53,364	Upton, Albert W.	Lowell, Mass.	Latches, knob	Mar. 20, 1866.
60,287	Upton, George L	Milbridge, Maine	Vessels, drag for	Dec. 4, 1866.
59,484	Upton, Isaac H.	New York, N. Y.	Fireplace	Nov. 6, 1866.
	Urbino, Sampson R. (*See* Eigner, Andreas, assignor.)			
	Same. (*See* Wenzel, Philipp, assignor.)			
	Usher, Stephen L. (*See* Armington, William W., assignor.)			
57,017	Utley, Gabriel	Chapel Hill, N. C.	Lamp and candle stand and holder	Aug. 7, 1866.
54,446	Utley, Grey	Petersburg, Va	Straw-cutting knife	May 1, 1866.
2,467	Utter, Samuel S.	New York, N. Y.	Stove ornament (Design)	Sept. 25, 1866.
60,288	Valentine, Samuel W.	Bristol, Conn.	Trunks	Dec. 4, 1866.
59,878	Valentine, William, and Thomas C. Longton, assignors to selves and Charles V. Mead.	Trenton, N. J	Swing power	Nov. 20, 1866.
58,155	Van Anden, William	Poughkeepsie, N. Y.	Railroad chair, machinery for making	Sept. 18, 1866.
60,289	Vanatta, Andrew J	Vanatta, Ohio	Churns	Dec. 4, 1866.
60,653	Van Auken, Sidney	Binghamton, N. Y	Boiler tubes, tool for cleaning	Dec. 18, 1866.
53,708	Vanbebber, A. C., A. Sallee, and J. Britton	Fulton, Ill	Valves, slide, balanced	Apr. 3, 1866.
52,471	Van Bockel, A. J.	Uniontown, N. J	Planter, corn	Feb. 6, 1866.
56,460	Van Bussum, Philip	Henderson, Ky	Washing machine	July 17, 1866.
	Vance, Robert H. (*See* Pike, S. B., assignor.)			
52,346	Vance, Samuel	Newburyport, Mass.	Pumps	Jan. 30, 1866.
	Vance, Samuel, and Albert E. Currier. (*See* Marden, J. A., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,212	Vance, S. B. H., and E. M. Smith, assignors to Mitchell, Vance & Co.	New York, N. Y	Light, drop, fixture	May 29, 1866.
	Van Cott, Thomas G. (*See* Chesebrough, N. H., assignor.)			
54,626	Vandegrift, Andrew J	Cincinnati, Ohio	Levels, spirit. (Antedated April 25, 1866)	May 8, 1866.
	Vanderear, John, and James P. McLean. (*See* McLean & Vanderear.)			
	Vanderkieft, B. A., and E. C. Fougera. (*See* Fougera & Vanderkieft.) Design.			
53,062	Vander Weyde, Peter H	Philadelphia, Pa	Still for petroleum	Mar. 6, 1866.
53,905	Same	....do	Percolator	Apr. 10, 1866.
55,398	Same	New York, N. Y	Inhaling gases, apparatus for	June 5, 1866.
57,412	Same	Philadelphia, Pa	Air chambers, mode of supplying air to	Aug. 21, 1866.
58,005	Same	....do	Petroleum and other liquids, distilling. (Antedated August 8, 1866.)	Sept. 11, 1866.
58,512	Same	....do	Petroleum, double still for. (Antedated September 21, 1866)	Oct. 2, 1866.
60,445	Same	....do	Percolating and filtering machine, continuous	Dec. 11, 1866.
	Vander Weyde, P. H., *et al.* (*See* Beschke, William, assignor.)			
54,233	Vande Sande, William	New York, N. Y	Stove, heating	Apr. 24, 1866.
55,559	Van Deusen, J. B	....do	Steering apparatus	June 12, 1866.
	Vandevort, Thomas, and Benjamin F. Burnett. (*See* Burnett & Vandevort.)			
53,906	Van Dewater, Henry	Buffalo, N. Y	Water wheels	Apr. 10, 1866.
	Van Doren, Silas and Joseph Horner. (*See* Horner & Van Doren.)			
59,098	Van Duzen, Ezra W	Cincinnati, Ohio	Bells, mode of hanging	Oct. 23, 1866.
59,099	Same	....do	Bells, mode of hanging	Oct. 23, 1866.
55,791	Van Duzer, Isaac F., assignor to self and R. M. Sayer	Middletown, N. Y	Cans, milk	June 19, 1866.
57,223	Van Dyeck, Charles	Nashville, Tenn	Mattresses, spring	Aug. 14, 1866.
59,485	Same	....do	Cigars	Nov. 6, 1866.
54,627	Van Etten, Frank	Jackson, Mich	Hay loaders	May 8, 1866.
2,201	Van Gaasbeek, Washington	Mount Vernon, N. Y	Stopper and lock, sash (Reissue)	Mar. 13, 1866.
54,043	Van Gieson, A. H	Newark, N. J	Leather splitting machine	Apr. 17, 1866.
59,786	Van Gieson, Elber	....do	Type separators	Nov. 20, 1866.
58,322	Van Hoeson, William S	Saugerties, N. Y	Supporter, sash	Sept. 25, 1866.
60,093	Van Hoevenbergh, James D	Kingston, N. Y	Carriages	Nov. 27, 1866.
57,599	Van Horn, Robert	Northfield, Ohio	Cheese hoops, expanding	Aug. 28, 1866.
53,063	Vankersen, James J	Kalamazoo, Mich	Apples, machine for coring and quartering	Mar. 6, 1866.
58,918	Van Olinda, Isaac	Brooklyn, N. Y	Pumps, &c., communicating reciprocating motion to. (Antedated October 5, 1866.)	Oct. 16, 1866.
57,018	Van Orman, Oliver	Ripon, Wis	Spokes, machines for tenoning	Aug. 7, 1866.
55,560	Van Patten, Frederick, and Oren A. Anthony	Ilion, N. Y	Chains, dies for welding links into	June 12, 1866.
52,774	Van Peyma, R. W	Lancaster, N. Y	Hullers, grain	Feb. 20, 1866.
52,914	Van Riper, G. Z. and W. A	La Grange, Mich	Baskets	Feb. 27, 1866.
57,224	Van Slyke, P. C	Bloomfield, Ind	Sorghum evaporator	Aug. 14, 1866.
58,919	Van Spanckeren, L. H	Muscatine, Iowa	Soap, manufacture of	Oct. 16, 1866.
60,290	Van Tine, Henry C	Pittsburg, Pa	Petroleum, refining	Dec. 4, 1866.

56,837	Van Valkenburg, W	Smithville, N. Y	Car coupling	July 31, 1866.
	Van Vechten, J. R., and J. P. Fitch. (*See* Powers, Timothy J., assignor.)			
	Same.			
	Same.			
59,323	Van Velthoven, Richard, assignor to William W. Harding	Philadelphia, Pa	Photographic albums	Oct. 30, 1866.
56,642	Van Vleck, F. B., and G. Nichols, assignors to selves and G. D. Merrill.	Plainfield, N. J	Fasteners, sash	July 24, 1866.
	Van Voorhis, J. D., and Charles Hall. (*See* Hall & Hubner, assignors.)			
55,748	Van Vrauken, B	Schenectady, N. Y	Clay and peat press	June 19, 1866.
	Van Wagenen, Charles, and George H. Clarke. (*See* Clarke & Van Wagenen.)			
59,685	Van Winkle, Edgar B	New York, N. Y	Indicators, station for railways	Nov. 13, 1866.
2,468	Van Wormer, Jasper	Albany, N. Y	Stove, hall, plates of a (Design)	Sept. 25, 1866.
54,447	Van Wormer, Jasper, and Michael McGarvey	....do	Stoves, base burning	May 1, 1866.
54,448	Varney, Joshua A	Alton, N. H	Rakes, horse	May 1, 1866.
53,709	Vaughan, Aaron C	Rainsburg, Pa	Fluid, burning	Apr. 3, 1866.
59,518	Vaughan, Aaron C., assignor to self and R. W. Park	Philadelphia, Pa	Lamp burners	Nov. 6, 1866.
	Vaughan, C. D. (*See* Hunt, H. C., assignor.)			
	Vaughan, C. D., *et al.* (*See* Bull, Daniel, assignor.)			
	Veach, William, and Cyrus W. Saladee. (*See* Saladee & Veach.)			
58,323	Veber, William, jr	Shingle Creek, N. Y	Ploughs	Sept. 25, 1866.
54,449	Vedder, Garret	Battle Creek, Mich	Threshing machines, device for elevating straw from	May 1, 1866.
56,643	Veerkamp, Florence L., and Charles F. Leopold	Philadelphia, Pa	Braiding machines	July 24, 1866.
60,094	Velu, Louis A., Eugene F. and Louis E. A. Fosse	France	Car brake	Nov. 27, 1866.
56,293	Verch, Julius	Albany, N. Y	Candle holder	July 10, 1866.
57,225	Vergnes, Maurice	New York, N. Y	Piano-fortes, apparatus for augmenting sound in	Aug. 14, 1866.
57,798	Same	....do	Boats, propelling apparatus for. (Antedated August 3, 1866)	Sept. 4, 1866.
58,354	Vergnes, Maurice, assignor to self and Alphonse Perrin	....do	Engines, steam, lubricating cups for	Sept. 25, 1866.
	Verrill, Byron D. (*See* Starkey, John, assignor.)			
53,507	Vester, Franz	Newark, N. J	Railway sleeper, iron	Mar. 27, 1866.
	Vickers, J. (*See* Bodine, John C., assignor.)			
57,448	Vickers, John H., assignor to the Bacon Arms Company	Norwich, Conn	Fire-arms, revolving	Aug. 21, 1866.
54,271	Vigoureaux, Stanislas	France	Threads for parti-colored printing, and for properly weaving the same, method of preparing.	Apr. 24, 1866.
55,180	Villard, Friederich	Mount Eaton, Ohio	Ventilator, air cooling	May 29, 1866.
59,879	Vincent, George	Stockton, Cal	Sewing machines, binder for	Nov. 20, 1866.
60,291	Vincent, H. H. B	Oshkosh, Wis	Broom head	Dec. 4, 1866.
59,486	Vincent, Joseph A.	Fairburg, Ill	Weather strips	Nov. 6, 1866.
52,627	Vincent, William B	Boston, Mass	Bread, soap, and black lead, machine for cutting	Feb. 13, 1866.
55,031	Voelter, Henry	Wurtemberg	Paper pulp, reducing wood to	May 22, 1866.
54,980	Vogt, Peter A	Buffalo, N. Y	Refrigerator	May 22, 1866.
2,346	Same	....do	Refrigerator (Reissue)	Aug. 28, 1866.
60,095	Volkmann, Bruno, assignor to Frederick Volkmann	New York, N. Y	Ploughs	Nov. 27, 1866.
	Volkmar, Charles, and Leopold F. Morawetz. (*See* Morawetz & Volkmar.)			
	Vollschwitz, R., and J. J. Schlaepfer. (*See* Rudolph, F., assignor.) Reissue.			
53,061	Von Achen, Joseph	Bloomfield, Iowa	Ploughs, garden, hand	Mar. 6, 1866.
52,915	Von Froben, Louis	Washington, D. C	Streets, machine for levelling	Feb. 27, 1866.
60,292	Von Gunten, Louis	Cincinnati, Ohio	Lathe chucks	Dec. 4, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
59,686	Von Schmidt, Allexey W	San Francisco, Cal	Boats, steam propeller for	Nov. 13, 1866.
54,628	Von Unwerth, Hartwich	New York, N. Y	Stones, artificial, for grinding and polishing metals, manufacture of.	May 8, 1866.
57,413	Vosburgh, N. H	Coxsackie, N. Y	Yoke, neck	Aug. 21, 1866.
	Vose, R. (*See* Wright, Thomas, assignor.)			
51,982	Vose, Richard	New York, N. Y	Fastener, sash	Jan. 9, 1866.
57,600	Same	do	Car springs, India-rubber	Aug. 28, 1866.
58,156	Vose, Richard, and William Toshach	do	Springs, machinery for coiling	Sept. 18, 1866.
55,749	Vose, William T	Newton, Mass	Lathe rest for turning balls	June 19, 1866.
	Same. (*See* Griffin, A. J., assignor.)			
	Same.			
56,644	Vosmer, F. W	Cincinnati, Ohio	Washing machine	July 24, 1866.
	Voss, Henry B., and Florian Dahis. (*See* Robitaille, Charles, ass'r.)			
55,965	Votteler, Frederick, assignor to Jacob W. Holenshade	do	Nut-tapping machine	June 26, 1866.
52,628	Vrooman, Addison	Kokomo, Ind	Faucet measures	Feb. 13, 1866.
58,006	Vrooman, Henry S	Hoboken, N. J	Toy, mechanical. (Antedated September 2, 1866)	Sept. 11, 1866.
53,201	Waddell, William W	Hillsboro', Ohio	Telegraph insulators	Mar. 13, 1866.
57,051	Wade, Alexander C., assignor to self and George Thillman	Paris, Ill	Churns	Aug. 7, 1866.
57,052	Same	do	Washing machine	Aug. 7, 1866.
	Wade, O. H., *et al.* (*See* Severance, James F., assignor.)			
52,227	Wadsworth, Arthur	Newark, N. J	Watches	Jan. 23, 1866.
55,750	Same	do	Watches	June 19, 1866.
58,324	Wage, William P	Bane Centre, N. Y	Heater, sad-iron	Sept. 25, 1866.
	Wagner, A., *et al.* (*See* Haneisen, Wagner & Nelson.)			
52,096	Wagner, A. F	Ilion, N. Y	Jack, lifting	Jan. 16, 1866.
52,347	Wagner, Conrad Ph	New York, N. Y	Mills, quartz	Jan. 30, 1866.
55,181	Same	do	Mills, quartz	May 29, 1866.
60,096	Wagoner, Elijah	Westminster, Md	Drills, grain	Nov. 27, 1866.
54,629	Wahl, Christian	Chicago, Ill	Pan, vacuum	May 8, 1866.
58,698	Wailey, Charles W	New Orleans, La	Cotton ties	Oct. 9, 1866.
54,825	Wait, G. W., assignor to self and A. J. Smith	Wayland, Mich	Spiles, tools for making	May 15, 1866.
53,907	Wait, Isaac H	Otisco, Mich	Supporter and fastener, sash	Apr. 10, 1866.
53,202	Wait, John H	Portsmouth, Ohio	Speed, device for changing	Mar. 13, 1866.
58,699	Same	do	Valves, slide balance	Oct. 9, 1866.
54,450	Waite, Enoch	Franklin City, Mass	Carding machines, cards for	May 1, 1866.
	Waite, Juston B. (*See* Scofield, Levi, assignor.)			
55,399	Wakefield, Charles A	Pittsfield, Mass	Planter, corn, hand	June 5, 1866.
56,294	Wakeman, Roswell, and Joseph L. Ballance	Port Deposit, Md	Baling hay	July 10, 1866.
60,293	Wakeman, Z. B	Rockford, Ill	Fastener, window-sash	Dec. 4, 1866.
53,908	Wakenshaw, William, and Theodore R. Dunham	Newark, N. J	Hinge, trunk	Apr. 10, 1866.
59,487	Walbach, J. J. B	Baltimore, Md	Rockets, war	Nov. 6, 1866.
59,687	Waldstein, H., and M. Fauski	New York, N. Y	Liquids, vessels for cooling	Nov. 13, 1866.
	Wales, S., *et al.* (*See* Wilder, Wales & Nichols)			
52,228	Wales, Sigourney	Boston, Mass	Windows	Jan. 23, 1866.
2,298	Wales, Thomas C., assignor to the Goodyear Metallic Rubber Shoe Company.	Naugatuck, Conn	Shoes and boots, gaiter, water-proof (Reissue)	June 26, 1866.

58,560	Walker, Andrew, assignor to self, J. P. Upham, and C. Eastman	Claremount, N. H	Diggers, potato	Oct. 2, 1866.
57,414	Walker, A. J	Lowell, Mass	Spice-holder	Aug. 21, 1866.
59,100	Walker, Benjamin	Birmingham, Mass	Bolt-heading machines	Oct. 23, 1866.
56,128	Walker, Chauncey L. S	Newark, N. J	Mosquito bars	July 3, 1866.
59,933	Walker, David	do	Blotting pad	Nov. 20, 1866.
54,044	Walker, Edward L	Benford's Store, Pa	Hay forks, horse	Apr. 17, 1866.
2,429	Same	do	Elevators, hay (Reissue)	Dec. 18, 1866.
54,451	Walker, Elias M	Gallatin, Mo	Planter, corn	May 1, 1866.
	Walker, E. M., and R. L. Dodge. (*See* Dodge & Walker.)			
	Walker, F. L., and G. A. and Anson Hardy. (*See* Hardy & Walker.)			
55,751	Walker, George W	Boston, Mass	Stove dampers	June 19, 1866.
60,446	Same	do	Stoves, cooking	Dec. 11, 1866.
	Walker, H. P., *et al.* (*See* Brazelle, Benjamin, assignor.)			
	Walker, James. (*See* Prindle, Edward F., assignor.)			
60,597	Walker, James H	Bergen, N. J	Umbrella, India-rubber, covered	Dec. 18, 1866.
	Walker, John. (*See* Alden, Leonard B., assignor.)			
52,229	Walker, Richard	Batavia, N. Y	Carriage seats	Jan. 23, 1866.
58,030	Walker, Richard, assignor to self and Peter Broadbrooks	do	Carriage wheels	Sept. 11, 1866.
57,415	Walker, Robert L	Globe Village, Mass	Brick machine	Aug. 21, 1866.
52,230	Walker, Sylvanus	New York, N. Y	Tail boards, self-locking	Jan. 23, 1866.
58,189	Walker, Thomas	England	Indicating the speed of vessels, apparatus for	Sept. 18, 1866.
55,561	Walker, William	New Haven, Conn	Picture-holder	June 12, 1866.
57,228	Walker, W. B., and N. D. Hartley	Salem, Iowa	Looms, hand	Aug. 14, 1866.
59,688	Walker, W. J	Baltimore, Md	Stills to prevent fraud on the revenue, apparatus to be attached to.	Nov. 13, 1866.
60,294	Same	do	Stills to prevent frauds, apparatus to be attached to	Dec. 4, 1866.
60,598	Walker, William S	Alexandria, Pa	Stoves, parlor, top for	Dec. 18, 1866.
60,447	Walkinshaw, J. C., assignor to self and Joseph W. McGonigle	Leavenworth, Kansas	Planters, corn	Dec. 11, 1866.
60,295	Walkinshaw, Samuel L	Baden, Pa	Steering apparatus	Dec. 4, 1866.
2,336	Wallace, Samuel Jacob	Carthage, Ill	Grain binders (Reissue)	Aug. 14, 1866.
59,101	Same	do	Car coupling. (Antedated October 13, 1866.)	Oct. 23, 1866.
54,795	Wallace, Thomas	Chicago, Ill	Furnace, hot-air. (Antedated May 1, 1866)	May 15, 1866.
59,295	Wallace, William V	New York, N. Y	Piano-forte action	Oct. 30, 1866.
60,097	Waller, G. B	Franklin, Ill	Churns	Nov. 27, 1866.
59,102	Wallister, Nicholas	Detroit, Mich	Drying kiln, grain	Oct. 23, 1866.
54,452	Wallick, Washington	Philadelphia, Pa	Horseshoes, machine for making	May 1, 1866.
53,710	Wallis, J. M., and Elias Miller	Milton, Iowa	Harvesters, corn	Apr. 3, 1866.
60,098	Wallis, J. M., and E. P. Swearingen	do	Pumps, bellows. (Antedated November 11, 1866.)	Nov. 27, 1866.
	Wallace, John N., and George Quick. (*See* Quick & Wallace.)			
58,700	Walrath, William H	Chittenango, N. Y	Bricks, machine for pressing	Oct. 9, 1866.
57,262	Walsh, Cornelius and Zachariah, assignors to Cornelius Walsh	Newark, N. J	Bag, carpet, frame	Aug. 14, 1866.
60,448	Same	do	Bag frames, travelling	Dec. 11, 1866.
58,713	Walsh, William, William, jr., and M. J	Brooklyn, N. Y	Hat-finishing presses	Oct. 2, 1866.
58,701	Walter, Charles P	Ashton Township, Pa	Cornices, plastering mould for	Oct. 9, 1866.
58,920	Walter, H. N	Norwich, N. Y	Skirt elevators	Oct. 16, 1866.
60,099	Walter, John	Princeton, Ill	Vine, grape, protectors	Nov. 27, 1866.
55,183	Walters, C. D., and John Wilson	Harrisburg, Pa	Lamplighters' torches	May 29, 1866.
52,231	Walton, Benjamin F	Philadelphia, Pa	Lamp wicks	Jan. 23, 1866.
	Walton, L. H., *et al.* (*See* Martin, B. G., assignor.)			
	Walton, William N. (*See* Hagan, Peter, assignor.)			
	Walworth James J. (*See* Clemens, Stillman A., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Walworth, James J. (*See* Clemens, Stillman A., assignor.)			
	Same.			
	Wampler, John B., and Joseph W. Beer. (*See* Beer & Wampler.)			
53,064	Wandell, John C. and James W	New York, N. Y	Elevator	Mar. 6, 1866.
2,215	Wanzer, Charles	do	Roofing slate, cement for (Reissue)	Mar. 27, 1866.
59,296	Wappich, Maximilian	Sacramento, Cal	Rudder	Oct. 30, 1866.
57,019	Warburton, W. F	Philadelphia, Pa	Hats	Aug. 7, 1866.
57,601	Ward, Daniel T	Cardington, Ohio	Washing machine	Aug. 28, 1866.
57,227	Ward, Edgar A	Gallipolis, Ohio	Press, hay	Aug. 14, 1866.
	Ward, Elton. (*See* Parker, Samuel, assignor.)			
52,916	Ward, Eugene	New York, N. Y	Wagons, attaching runners to wheels of	Feb. 27, 1866.
	Ward, Henry D., and William A Richardson. (*See* Richardson Ward.)			
	Same.			
54,796	Ward, H. M	Stone Church, N. Y	Gates	May 15, 1866.
57,449	Ward, James M., assignor to self and John D. Gilbert	New York, N. Y	Hydrants	Aug. 21, 1866.
	Ward, L. C., *et al.* (*See* Turrell, Stanton & Ward.)			
60,296	Ward, Samuel H	Altona, Ill	Carriages, attaching thills to	Dec. 4, 1866.
54,981	Ward, Rivera	Alder Creek, N. Y	Nut machines	May 22, 1866.
55,445	Ward, Valentine	San Francisco, Cal	Post, hitching	June 5, 1866.
56,838	Ward, W. G	Savona, N. Y	Hammers, nail	July 31, 1866.
58,007	Same	do	Clothes pin	Sept. 11, 1866.
	Ward, W. L., and William H. Bancroft. (*See* Woodford & Bancroft, assignors.)			
57,602	Warden, Oscar	Cincinnati, Ohio	Lenses, fluid	Aug. 28, 1866.
	Warden, Rensford & Company. (*See* Barnes, Charles, assignor.)			
	Wardwell, Charles W. (*See* Deeker, John, assignor.)			
	Ware, Justin C., and Wm. H. Sangster. (*See* Sangster & Ware.)			
54,655	Ware, Paul T	Toronto, Canada	Baths, compressed air	May 8, 1866.
57,416	Ware, R. W	Chicago, Ill	Crutches	Aug. 21, 1866.
2,522	Ware, W. H	Philadelphia, Pa	Bottle (Design)	Dec. 4, 1866.
56,470	Ware, W. Powell	New York, N. Y	Calendar. (Antedated June 29, 1866)	July 17, 1866.
51,983	Wareham, George W	Dayton, Ohio	Fastener, sash	Jan. 9, 1866.
56,839	Warfield, David R	Muscatine, Iowa	Planter, corn	July 31, 1866.
2,243	Waring, John B	New York, N. Y	Trade mark for pens and pen boxes (Design)	Jan. 16, 1866.
60,297	Warner, A. E. and J. V	Norwalk, Ohio	Sawing machines	Dec. 4, 1866.
56,332	Warner, Amaziah S., assignor to self and Henry Reynolds	Springfield, Mass	Cartridge shells, machine for drawing	July 10, 1866.
58,921	Warner, Charles R., and Moses Bales	London, Ohio	Sawing machines	Oct. 16, 1866.
2,352	Warner, C. W	Williston, Vt	Rakes, horse (Reissue)	Sept. 4, 1866.
58,325	Warner, Gustavus A	Portland, Oregon	Flour packers	Sept. 25, 1866.
2,223	Warner, James, assignor to J. J. Greenough	New York, N. Y	Fire-arms, revolving (Reissue)	Apr. 10, 1866.
52,629	Warner, J. F	Oskaloosa, Iowa	Fence	Feb. 13, 1866.
58,514	Warner, L. A	Freeport, Ill	Mills, cider and fruit presses	Oct. 2, 1866.
53,365	Warner, William, assignor to self, H. McIlvain, J. L. Warner, and G. C. Sharp.	Philadelphia, Pa	Car brake	Mar. 20, 1866.

57,020	Warner, William, and E. S. Redstreake	do	Gas apparatus	Aug. 7, 1866.
55,966	Warren, D. T., assignor to self and Amadee Spadone	New York, N. Y.	Pencil case	June 26, 1866.
54,083	Warren, Frederic Pelham	Great Britain	Vessels, iron, sheathing for	Apr. 17, 1866.
56,295	Warren, G. W.	Macomb, Ill	Cultivators	July 10, 1866.
	Warren, J., *et al.* (*See* Keck, Rudolph, assignor.)			
	Warren, James H., and Elon White. (*See* White & Warren.)			
58,008	Warren, John S.	Port Chester, N. Y.	Water wheels	Sept. 11, 1866.
55,401	Warren, Joseph B.	Danversport, Mass.	Cradle stool and chair	June 5, 1866.
55,184	Warren, Levi N.	Milwaukee, Wis.	Drills, grain	May 29, 1866.
56,296	Warren, Oscar F.	Pembroke, N. Y.	Plough cleaner	July 10, 1866.
51,904	Warren, Owen G.	New York, N. Y.	Drill suction. (Antedated December 26, 1865)	Jan. 9, 1866,
54,045	Same	do	Quartz comminuter	Apr. 17, 1866.
54,982	Same	do	Drill, rock	May 22, 1866.
53,508	Warren, O. J.	do	Boots, crimping. (Antedated March 9, 1866)	Mar. 27, 1866.
	Warrington, J., *et al.* (*See* Locke, Warrington, Carrett, Marshall & Telford.)			
56,645	Warrington, Samuel	Philadelphia, Pa.	Pen, writing	July 24, 1866.
53,711	Warth, Alvin	Stapleton, N. Y.	Pulleys, construction of	Apr. 3, 1866.
54,630	Same	do	Treadles, anti-reversing attachment to	May 8, 1866.
55,182	Same	do	Sewing machines	May 29, 1866.
56,646	Same	do	Sewing machines	July 24, 1866.
58,925	Same	do	Sewing machines	Oct. 16, 1866.
	Warwick, William, and Christopher F. Knauer. (*See* Knauer & Warwick.)			
58,923	Warwick, William H.	Dunlevy, Ohio	Furrowing corn ground, machine for	Oct. 16, 1866.
56,127	Wash, James	Mount Sterling, Ill.	Bechives	July 3, 1866.
59,103	Washburn, A., and T. Brintnall	Medina, Ohio / York, Ohio	Shearing sheep, machine for	Oct. 23, 1866.
52,095	Washburn, Albion K.	Bridgewater, Mass.	Pegging jack	Jan. 16, 1866.
54,983	Washburn, George I.	Worcester, Mass.	Engines, steam	May 22, 1866.
57,228	Same	do	Engines, steam	Aug. 14, 1866.
57,799	Same	do	Engines, steam	Sept. 4, 1866.
52,917	Washburn, Richard	Monsey, N. Y.	Glass, manufacture of	Feb. 27, 1866.
52,775	Washburn, R. E.	San Francisco, Cal.	Sluice boxes	Feb. 20, 1866.
	Washington Mills. (*See* Wasley, John R., assignor.) Design.			
	Washoe Tool Company. (*See* Lowman, H. L., assignor.) Reissue.			
2,503	Wasley, John R., assignor to the Washington Mills	Boston, Mass.	Table cover (Design)	Nov. 6, 1866.
55,936	Wasson, James	Fairwater, Wis.	Broom head	June 26, 1866.
56,297	Wate, Joseph C.	Wilton Junction, Iowa	Wind wheel	July 10, 1866.
	Waterman, Charles A. (*See* Witsil, George L., assignor.)			
53,203	Waterman, Henry	Brooklyn, N. Y.	Boiler tubes, apparatus for cleaning	Mar. 13, 1866.
52,652	Waterman, Julius, assignor to self and Joseph Meyer	New York, N. Y.	Buckles	Feb. 13, 1866.
2,289	Waterman, Nathaniel, assignor to the Russell and Erwin Manufacturing Company.	New Britain, Conn	Pan, egg and cake baker (Reissue)	June 19, 1866.
	Waters, Charles H., and E. B. Bigelow. (*See* Bigelow & Waters.)			
58,326	Waters, G. F.	Waterville, Maine.	Pruning instruments	Sept. 25, 1866.
52,630	Waters, Hervey	Northridge, Mass	Metals, machines for rolling	Feb. 13, 1866.
57,021	Same	Boston, Mass	Rolling apparatus	Aug. 7, 1866.
59,488	Same	do	Rolling-die apparatus	Nov. 6, 1866.
53,909	Waters, Z. D.	Brookville, Md	Seeding machines	Apr. 10, 1866.
59,324	Wathew, Henry, assignor to Thomas and George M. Mills	Philadelphia, Pa.	Almonds, machines for peeling	Oct. 30, 1866.
59,325	Same	do	Pans, confection	Oct. 30, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
60,599	Watkins, John R.	Baltimore, Md.	Trace fastening	Dec. 18, 1866.
	Watrous, D. W. (*See* Nichols, W. H., assignor.)			
53,910	Watrous, Joseph, jr.	Mystic River, Conn	Gins, cotton	Apr. 10, 1866.
53,366	Watrous, W. H.	Hartford, Conn.	Bell, door	Mar. 20, 1866.
54,234	Watson, Alexander T.	New York, N. Y.	Car spring, railroad	Apr. 24, 1866.
55,432	Watson, John, assignor to Oran W. Seeley	Buffalo, N. Y.	Brick machine	June 5, 1866.
59 297	Watson, Thomas, and Charles Perry	Brooklyn, N. Y.	Ladder, extension	Oct. 30, 1866.
59,326	Watson, William C., assignor to self and Ira W. Gregory	Paterson, N. J.	Glue, liquid, manufacture of	Oct. 30, 1866.
55,937	Watson, William H.	Yonkers, N. Y.	Presses, tobacco	June 26, 1866.
57,800	Same	do	Tobacco, machines for pressing. (Antedated August 21, 1866)	Sept. 4, 1866.
59,488	Same	New York, N. Y.	Tobacco, machines for pressing	Nov. 6, 1866.
60,100	Same	Yonkers, N. Y.	Tobacco, machines for pressing. (Antedated Oct. 10, 1866)	Nov. 27, 1866.
54,453	Watson, W. M.	Tonica, Ill.	Ploughs, gang	May 1, 1866.
59,880	Watson, William S.	New York, N. Y.	Hoisting apparatus	Nov. 20, 1866.
60,298	Watson, William T	Nottingham, Md.	Presses, tobacco	Dec. 4, 1866.
60,449	Same	do	Cultivators	Dec. 11, 1866.
56,298	Watt, George	Richmond, Va.	Ploughs	July 10, 1866.
57,801	Same	do	Whiffletree	Sept. 4, 1866.
52,232	Watt, James	Buffalo, N. Y.	Hammers, steam valve gear for	Jan. 23, 1866.
	Wax, Newman X. (*See* Lauterback, Frederick H., assignor.)			
59,104	Way, Orville W.	Troy, N. Y.	Pans, sheet metal, machine for making	Oct. 23, 1866.
55,562	Waymoth, Thomas V.	New York, N. Y.	Envelopes, machine for gumming and printing	June 12, 1866.
58,327	Same	do	Envelope machine	Sept. 25, 1866.
2,366	Waymoth, Thomas V., assignor to Henry C. Berlin and George H. Jones.	do	Envelopes, machine for gumming and printing (Reissue)	Sept. 25, 1866.
57,417	Weathers, James	Greensburg, Ind	Wagon brakes	Aug. 21, 1866.
60,299	Weaver, Clemens	Easton, Pa	Car coupling	Dec. 4, 1866.
56,299	Weaver, I. S	Dayton, Ohio	Ditching machine	July 10, 1866.
55,938	Weaver, James E.	Temperanceville, Pa.	Journals, apparatus for oiling	June 26, 1866.
58,157	Same	do	Oil cans and oilers	Sept. 18, 1866.
58,515	Weaver, J. L.	Davis, Ill.	Washing machines	Oct. 2, 1866.
57,603	Weaver, Theo. S.	Harrisburg, Pa	Whip socket	Aug. 28, 1866.
52,631	Weaver, William	Nashua, N. H.	Screws and bolts	Feb. 13, 1866.
54,797	Same	Phenixville, Pa.	Cherry stoner	May 15, 1866.
53,754	Weaver, William, assignor to E. Price	do	Paring, cutting, and coring machine	Apr. 3, 1866.
59,298	Weaver, Willis	Salem, Ohio	Carpet fastener	Oct. 30, 1866.
	Webb, A., and Henry Myers. (*See* Myers & Webb.)			
54,454	Webb, Charles Hunter	San Francisco, Cal.	Drill, rock	May 1, 1866.
	Webb, Jeremiah and Albion, *et al.* (*See* Dunham & Webb.)			
59,105	Webb, Milo	Chenango Forks, N. Y.	Hay, machine for raking and loading	Oct. 23, 1866.
55,563	Webb, R. L.	New Britain, Conn.	Hook, snap	June 12, 1866.
56,471	Webb, R. M.	New York, N. Y.	Alarm, burglar	July 17, 1866.
55,185	Webb, Timothy U.	Springfield, Ill.	Cultivators	May 29, 1866.
56,473	Webber, C. C.	Calmar, Iowa	Stove-pipe drum	July 17, 1866.
54,471	Webber, C. C., assignor to self and Warren M. Smith	Springfield, Mass.	Wrenches	May 1, 1866.

56,647	Webber, James H	Charlestown, Mass	Lamp shades	July 24, 1866.
55,402	Weber, Charles	West Meriden, Conn	Table mat	June 5, 1866.
	Weber, R., and J. Eiberweiser. (*See* Eiberweiser & Weber.)			
56,300	Webster, Allen A	Fremont, Ind	Racks, sheep	July 10, 1866.
58,158	Webster, D. N	Geneva, Ohio	Rack, hay	Sept. 18, 1866.
57,229	Webster, D. P	West Gilmantown, N. H	Bed bottom, spring	Aug. 14, 1866.
55,564	Webster, Edward	Hartford, Conn	Furnace, hot-air	June 12, 1866.
52,097	Webster, Hazen	Elgin, Ill	Car coupling	Jan. 16, 1866.
52,500	Webster, Horace H., assignor to self and Sylvester Davis	Claremont, N. H	Planter and seeder	Feb. 6, 1866.
2,469	Webster, John T., assignor to Edward Harvey	New York, N. Y	Floor oil-cloth, pattern (Design)	Sept. 25, 1866.
53,367	Webster, Joseph H	St. Louis, Mo	Furnace, steam boiler	Mar. 20, 1866.
2,371	Webster, N. P., and Robert W. Young	Portsmouth, Va / Richmond, Va	Boilers, steam, prevention of incrustation in (Reissue)	Oct. 2, 1866.
58,924	Webster, Theodore L	Brooklyn, N. Y	Tube, sheet, cutters	Oct. 16, 1866.
58,516	Wedekind, Victoria Quarre	Philadelphia, Pa	Engraving, copper, &c	Oct. 2, 1866.
53,204	Weed, Alfred	Boston, Mass	Files, machines for cutting	Mar. 13, 1866.
57,230	Same	do	Rasps, machine for cutting	Aug. 14, 1866.
53,509	Weed, Charles, assignor to self and J. S. Shailer	do	Water meters	Mar. 27, 1866.
59,689	Weed, Harrison	New Haven, Conn	Lamps, &c., suspension device for	Nov. 13, 1866.
57,022	Weed, James	Muscatine, Iowa	Vault, ventilated, for wine, potatoes, &c	Aug. 7, 1866.
	Weeden, W. N., and J. C. Merriam. (*See* Merriam & Weeden.)			
2,329	Weeks, John J., assignor to Purches Miles	New York, N. Y	Sausage stuffer (Reissue)	Aug. 7, 1866.
58,742	Weems, John	England	Ships, construction of	Oct. 9, 1866.
53,712	Wegrather, Franz	Chicago, Ill	Egg holder	Apr. 3, 1866.
	Wehle Charles. (*See* Kinkel & Hubbe.)			
	Same. (*See* Kinkel, Charles, assignor.)			
54,631	Wehle, Henry	Hoboken, N. J	Clothes wringers	May 8, 1866.
57,023	Wehrly, John N	Somerville, N. J	Harvester cutters	Aug. 7, 1866.
51,907	Weild, William	Great Britain	Thread, sewing, upon spools, machines for winding	Jan. 2, 1866.
56,152	Weimer, P. L., assignor to Aurora Iron Company	Lebanon, Pa	Metal tubes, machines for making	July 3, 1866.
60,600	Weinberg, Israel	Philadelphia, Pa	Hooks and eyes	Dec. 18, 1866.
58,922	Weir, Robert	Cohoes, N. Y	Toy walking figure	Oct. 16, 1866.
53,205	Weir, W. S., jr	Monmouth, Ill	Cultivators	Mar. 13, 1866.
54,984	Weisenberger, P	Pittsburg, Pa	Oils, hydro-carbon, process of refining	May 22, 1866.
	Weiss, C. P., and H. W. Dopp. (*See* Dopp & Weiss.)			
	Weiss, Henry, *et al.* (*See* Oberlander, Weiss & Bagnicki.)			
55,565	Weissenborn, Edward	Hudson City, N. J	Peat, apparatus for moulding	June 12, 1866.
58,926	Weissenborn, Gustavus	New York, N. Y	Peat, apparatus for drying	Oct. 16, 1866.
	Welch, John H. (*See* Cook, Henry, assignor.)			
60,450	Welch, Patrick	New York, N. Y	Type-dressing machine	Dec. 11, 1866.
53,713	Welch, Thomas	Churchill, N. Y	Harvesting machines	Apr. 3, 1866.
56,472	Weld, Calvin J	West Wardsborough, Vt	Wash-boards, machines for fluting	July 17, 1866.
53,714	Welham, Thomas	Washington, D. C	Fans, ladies'	Apr. 3, 1866.
59,106	Same	Philadelphia, Pa	Carding engines, apparatus for spinning direct from the doffers of	Oct. 23, 1866.
	Welker, F., and W. H. Hicks. (*See* Hicks & Welker.)			
55,186	Weller, Joseph	Washington C. H., Ohio	Tuyeres	May 29, 1866.
54,237	Wellhouse, George	Akron, Ohio	Harvester rakes	Apr. 24, 1866.
53,065	Wellington, Darius, assignor to Cornelius Wellington	Boston, Mass	Peat machine	Mar. 6, 1866.
55,967	Same	do	Water-closets	June 27, 1866.
60,601	Wellman, Marshall D	Pittsburg, Pa	Fireplaces, open	Dec. 18, 1866.
60,602	Same	do	Stoves, cooking	Dec. 18, 1866.
52,098	Wells, A	Morgantown, West Va	Rakes, horse	Jan. 16, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
60,300	Wells, A	Morgantown, West Va	Seed, cotton, cleaners	Dec. 4, 1866.
59,881	Wells, Ambrose H.	Waterbury, Conn	Spittoon for railroad cars	Nov. 20, 1866.
60,301	Wells, Charles	Cincinnati, Ohio	Press, hand, rack motion for	Dec. 4, 1866.
52,348	Wells, Charles C	Lyons, Iowa	Cultivators	Jan. 30, 1866.
53,368	Wells, Charles S, and L. H. Mayott	Springfield, Mass	Drill chucks	Mar. 20, 1866.
	Wells, D. H., *et al.* (*See* Prosser, T. T., assignor.)			
	Wells, D. W., *et al.* (*See* Prosser, T. T., assignor.)			
51,883	Wells, Morris	Brooklyn, N. Y	Metal, sheet, ware, dies for the manufacture of	Jan. 2, 1866.
52,233	Wells, M. D.	Morgantown, West Va	Harrow	Jan. 23, 1866.
59,490	Same	do	Planter, cotton seed	Nov. 6, 1866.
57,604	Wells, M. D., E. C., and A.	do	Seed distributor	Aug. 28, 1866.
56,301	Wells, R. T. M.	Roxbury, Mass	Cars, railroad	July 10, 1866.
	Wells, Samuel, jr., and John J. Currier. (*See* Currier & Wells.)			
	Wells, Samuel A., and Alpheus A. Lusk. (*See* Lusk & Wells.)			
52,472	Wells, T. J	New York, N. Y	Peat machine	Feb. 6, 1866.
59,882	Wells, Thomas J	do	Peat machine	Nov. 20, 1866.
53,510	Wells, William	South Danvers, Mass	Lasts	Mar. 27, 1866.
54,096	Wells, W. J.	Delaware, Ohio	Sawing machines	Apr. 17, 1866.
57,802	Same	Sidney, Ohio	Hoe, weeding	Sept. 4, 1866.
54,798	Wells, W. S., and S. B. Wells	New York, N. Y. / Middleburg, N. Y.	Boiler feeders	May 15, 1866.
59,107	Wells, W. T	Decatur, Ill	Hinges	Oct. 23, 1866.
56,474	Welsh, Joseph	Philadelphia, Pa	Looms	July 17, 1866.
52,473	Welsh, J. A.	Xenia, Ohio	Splint machines, blind	Feb. 6, 1866.
57,605	Same	do	Hulling machines, grain	Aug. 28, 1866.
60,302	Welsh, William, assignor to self and Ora C. Colby	McHenry, Ill	Buckles	Dec. 4, 1866.
	Welty, Wesley, and Charles James Eames. (*See* Jones, Thomas J., assignor.)			
58,927	Wendell, Isaac P	Philadelphia, Pa	Car, box, railroad	Oct. 16, 1866.
	Wendler, Robert, and Fred. Hoffman,. (*See* Hoffman & Wendler.)			
56,867	Wenisch, William F., assignor to self and John Wenisch	New York, N. Y	Fire kindling	July 31, 1866.
	Wentworth, Charles C., and Joseph Pratt. (*See* Simpson, Robert, assignor.)			
52,234	Wentz, John	Shelby, Ohio	Stencil plate	Jan. 23, 1866.
53,549	Wenzel, Philip, assignor to Sampson R. Urbino	Hesse-Darmstadt	Leather, substitute for	Mar. 27, 1866.
53,930	Werner, Cassius M., assignor to self and Edwin A. Bigelow	Rockford, Ill	Horseshoes	Apr. 10, 1866.
58,355	Same	do	Horseshoes	Sept. 25, 1866.
53,369	Werntz, Henry	Pine Grove, Pa	Car-brake shoes	Mar. 20, 1866.
59,690	Wernz, David	New York, N. Y	Beer while on draught, preserving	Nov. 13, 1866.
58,517	Wertman, Daniel K., and William H. Reinbold	Centralia, Pa	Seed, clover, machine for gathering	Oct. 2, 1866.
54,455	Wesson, Samuel	Worcester, Mass	Pen-handle tubes, machine for finishing the ends of	May 1, 1866.
54,456	West, Charles O., and John Carey	Martinsville, Ohio	Sugar, centrifugal machine for draining and cleaning	May 1, 1866.
57,231	West, George E.	Indianapolis, Ind	Fence posts, method of driving	Aug. 14, 1866.
57,606	West, Isaah M	Wilmington, Ohio	Churns	Aug. 28, 1866.
54,457	West, John	Bethlehem, Pa	Cross-heads	May 1, 1866.

54,047	West, J. Burns	Lakeville, N. Y.	Lathes, wood-turning	Apr. 17, 1866.
	Same. (*See* Durkee, Branch W., assignor.)			
55,403	West, Levi H.	Cambridge, Mass.	Car trucks	June 5, 1866.
52,918	West, Mary J.	Watertown, N. Y.	Sewing machines, marking attachment for	Feb. 27, 1866.
59,732	West, Stephen, assignor to West and Thorn	Trenton, N. J.	Baking pans	Nov. 13, 1866.
	West, T. J., *et al.* (*See* Swan, R. C., assignor.)			
	West, William H., and G. M. Ross. (*See* Ross & West.)			
2,513	Westbrook, George W.	New York, N. Y.	Trade mark (Design)	Nov. 27, 1866.
52,919	Westcott, Amos	Syracuse, N. Y.	Churns	Feb. 27, 1866.
55,566	Same	do	Churns	June 12, 1866.
59,691	Westcott, Henry P.	Seneca Falls, N. Y.	Churns	Nov. 13, 1866.
2,175	Westlake, William	Chicago, Ill.	Lanterns (Reissue)	Feb. 13, 1866.
2,232	Same	do	Lanterns, machine for making (Reissue)	Apr. 17, 1866.
58,518	Same	do	Pots, coffee	Oct. 2, 1866.
2,239	Westlake, William, assignor to self, James E. Cross, and James L. Dane.	do	Lanterns (Reissue)	May 8, 1866.
2,337	Same	do	Lanterns (Reissue)	Aug. 14, 1866.
58,519	Weston, Charles H.	Lowell, Mass.	Hook, bench	Oct. 2, 1866.
56,129	Weston, D. M.	Boston, Mass.	Pumps, reciprocating	July 3, 1866.
	Same. (*See* Ferguson, Levi, assignor.)			
	Weston, David W. (*See* Chapman, John C., assignor.)			
	Weston, E. H. (*See* Sheffield and Palmer, assignors.)			
	Weston, H. S., and G., and G. T. Benjamin. (*See* Benjamin & Weston.)			
59,299	Weston, Irving E.	Winchendon, Mass.	Mop head	Oct. 30, 1866.
53,206	Weston, James W.	New York, N. Y.	Limbs, artificial, lining for. (Antedated March 5, 1866)	Mar. 13, 1866.
53,731	Weston, James W, F. Buckner, and R. Boeklen, assignors to James W. Weston	do, do, Brooklyn, N. Y.	Legs, artificial	Apr. 10, 1866.
	Wetmore, A. R., *et al.* (*See* Krom, S. R., assignor.)			
	Same.			
	Wetmore, Apollos R. (*See* Krom, S. R., assignor.)			
54,236	Wetmore, J. W.	Erie, Pa.	Railroad chair	Apr. 24, 1866.
	Wettengell, George. (*See* Malone, Joseph, assignor.)			
	Whait, James and William, *et al.* (*See* Marinus & Whait.)			
63,303	Whaler, W. D.	Northville, Mich.	Clocks, pendulums for	Dec. 4, 1866.
58,009	Wharton, J. C.	Nashville, Tenn.	Condenser	Sept. 11, 1866.
52,099	Wharton, W. J.	Philadelphia, Pa.	Railroad frogs	Jan. 16, 1866.
57,024	Wheat, Corydon, and Charles Bouge	Geneva, N. Y.	Fruit baskets	Aug. 7, 1866.
59,692	Wheat, Jesse S.	South Wheeling, West Va.	Hides and skins, apparatus for fleshing and storing	Nov. 13, 1866.
	Wheaton, Washington W. (*See* Campbell, Cornelius L., assignor.)			
53,207	Whedon, Oscar	Medina, N. Y.	Cattle, device for watering. (Antedated March 2, 1866)	Mar. 13, 1866.
59,491	Wheeler, Albert	Gloucester, Mass.	Hammer, bush	Nov. 6, 1866.
54,237	Wheeler, C. O.	Mattison, Ill.	Car coupling	Apr. 24, 1866.
53,715	Wheeler, Daniel	Decorah, Iowa.	Wells, artesian, boring	Apr. 3, 1866.
	Wheeler, D., and F. S. Sanford. (*See* Sanford & Wheeler.)			
53,911	Wheeler, Edward P.	Nebraska City, Col. Ter'y.	Cultivators	Apr. 10, 1866.
	Wheeler, E. P., *et al.* (*See* Canfield, Coleman & Wheeler.)			
	Same. (*See* Canfield, Still & Wheeler.)			
	Wheeler, Freeland, *et al.* (*See* Sturdevant, Parsons & Wheeler.)			
55,752	Wheeler, H. F.	Boston, Mass.	Fire-arms, breech-loading	June 19, 1866.
60,304	Wheeler, John	Augusta, Me.	Washboard and wringer	Dec. 4, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
55,025	Wheeler, John, W., assignor to H. H. Wheeler, and S. R. Boardman.	Cleveland, Ohio	Water drawers	May 22, 1866.
53,511	Wheeler, Jonathan	Athol, Mass	Washing machine dish	Mar. 27, 1866.
55,404	Same	do	Knife polisher and knife and seissor sharpeners	June 5, 1866.
52,100	Wheeler, Norman W	Brooklyn, N. Y	Ship building	Jan. 16, 1866.
52,101	Same	do	Engines, triangular beam	Jan. 16, 1866.
52,474	Same	do	Engines, steam	Feb. 6, 1866.
52,475	Same	do	Engines, steam, valve-gear for	Feb. 6, 1866.
52,476	Same	do	Stills for distilling salt water. (Antedated December 26, 1865)	Feb. 6, 1866.
52,477	Same	do	Gases, method of relieving liquids of	Feb. 6, 1866.
55,405	Same	do	Steam generators	June 5, 1866.
55,406	Same	do	Engines, steam, packing slide-valves for	June 5, 1866.
56,130	Same	do	Condensation and refrigeration, method of	July 3, 1866.
55,433	Wheeler, S. H., ass'r to self, R. Hedden, J. and R. B. Thompson	Dowagiae, Mich	Pumps, measuring	June 5, 1866.
57,232	Wheeler, Sidney S., and Daniel B. Manley	Danbury, Conn	Hats, machines for pouncing	Aug. 14, 1866.
59,108	Wheeler, Thomas S	Boston, Mass	Truss-pads	Oct. 23, 1866.
53,716	Wheeler, Warren B	Waterloo, N. Y	Roofing cement	Apr. 3, 1866.
53,066	Wheeler, Zenos	San Francisco, Cal	Ore crushers. (Antedated February 19, 1866)	Mar. 6, 1866.
59,492	Wheelock, B. J	Bedford, Ohio	Gates, fence	Nov. 6, 1866.
59,109	Wheelock, George D	Freedom, Ohio	Tanning	Oct. 23, 1866.
59,300	Wheelock, Seth	Richland, Mich	Plaster, &c., machines for sowing	Oct. 30, 1866.
53,067	Whelpley, James D	Boston, Mass	Steam injected water motor	Mar. 6, 1866.
53,717	Same	do	Gearing, friction, belted	Apr. 3, 1866.
53,068	Whelpley, James D., and James J. Stover	do	Air, apparatus for removing dust and gases from	Mar. 6, 1866.
53,208	Same	do	Burning waste coal, method of	Mar. 13, 1866.
53,718	Same	do	Ores, apparatus for separating	Apr. 3, 1866.
58,010	Same	do	Amalgamator	Sept. 11, 1866.
58,011	Same	do	Metals, precious, machine for cleaning and brightening particles of	Sept. 11, 1866.
58,012	Same	do	Ores, roasting, desulphurizing, and smelting	Sept. 11, 1866.
59,693	Same	do	Copper, process of treating sulphurous ores of	Nov. 13, 1866.
59,694	Same	do	Zinc and lead, method of treating the mixed sulphurets of	Nov. 13, 1866.
56,695	Same	do	Furnaces, apparatus for feeding fuel to	Nov. 13, 1866.
59,696	Whelpley, James D., and Jacob J. Stover	do	Ores and minerals, process and machinery for obtaining metals and other products from.	Nov. 13, 1866.
	Whinfield, H., and J. A. Jillson. (*See* Jillson & Whinfield.) Reissue.			
56,333	Whipple, George A., assignor to self and Jacob Painter	West Pittsburg, Pa	Furnaces, puddling	July 10, 1866.
	Whipple, James T. (*See* Duck & Whitcomb.)			
	Whipple, J. T., and N. H. Sherburn. (*See* Sherburn & Whipple.)			
57,803	Whipple, Milton	Medina, N. Y	Rein, driving, holders	Sept. 4, 1866.
51,884	Whipple, Milton D	Cambridge, Mass	Cloth, felted, machines for fulling and finishing	Jan. 2, 1866.
55,407	Whisler, U	New Market, Ohio	Churns	June 5, 1866.
59,883	Whitaker, George	Lewistown, Ill	Distributing tables	Nov. 20, 1866.
55,939	Whitaker, Harvey G	Brattleborough, Vt	Stove-pipe drum	June 26, 1866.

59,301	Whitaker, Samue H	Covington, Ky	Furnace, decarbonizing	Oct. 30, 1866.
53,912	Whitcomb, Edwin P	Coldwater, Mich	Churns	Apr. 10, 1866.
	Whitcomb, Elias K., and John H. Duck. (*See* Duck & Whitcomb.)			
	Whitcomb, P. S. (*See* Woodford, H. E. & C. W., assignors.)			
	White, Austin. (*See* Woods, George V., assignor.)			
	White, C. H., *et al.* (*See* James, Thomas, assignor.)			
54,048	White, Elao, and James H. Warren	San Francisco, Cal	Band gripe	Apr. 17, 1866.
	White, George C., and Alfred C. Brush. (*See* Brush & White.)			
59,332	White, George F., and Harvey Chamberlain	England	Belting, &c., clasps for	Oct. 30, 1866.
57,646	White, George L., assignor to W. W. Dutcher & Company	Cumberland, R. I	Looms, temples for	Aug. 28, 1866.
60,101	White, George L	Woonsocket, R. I	Looms	Nov. 27, 1866.
57,053	White, George M., assignor to self and T. B. Carpenter	New Haven, Conn	Curtain fixtures	Aug. 7, 1866.
56,648	White, Harvey	Oneida Castle, N. Y	Shingle machines	July 24, 1866.
54,632	White, Hiram W	Olney, Ill	Churns	May 8, 1866.
53,512	White, James	Cleveland, Ohio	Churns	Mar. 27, 1866.
	White, James, and Jesse Stow. (*See* Stow & White.)			
60,102	White, J. F	Brattleborough, Vt	Mop-wringer	Nov. 27, 1866.
54,265	White, James M., assignor to self and David King	Springfield, Ohio	Tuyeres	Apr. 24, 1866.
	White, John L., and A. W. Holt. (*See* Pond, John N., assignor.)			
53,546	White, Leroy S., assignor to self, Rogers & Brother, and G. Kendrick.	Waterbury, Conn	Cutlery, metallic handles for. (Antedated March 2, 1866)	Mar 27, 1866.
53,513	White, Lewis B	Moscow, N. Y	Trusses. (Antedated September 27, 1865)	Mar. 27, 1866.
53,719	White, Luther C	Waterbury, Conn	Scissors	Apr. 3, 1866.
56,131	Same	do	Burners, kerosine	July 3, 1866.
2,264	White, Luther C., assignor through mesne assignments, to C. D. Leete, D. Smith, J. M. Hall, and C. K. Farmer.	Springfield, Mass	Lamp-tops, rivets, dies for making (Reissue)	June 5, 1866.
55,940	White, Martin V. B	Troy, N. Y	Supporters, sash	June 26, 1866.
	White, Michael, and George Ross. (*See* Ross & White.)			
56,132	White, Nelson B	South Dedham, Mass	Bed springs	July 3, 1866.
2,287	White, Nelson B., assignor through mesne assignments, to William B. Rhoads.	do	Clothes wringers (Reissue)	June 12, 1866.
59,145	White, N. B., assignor to self and Henry B. Baker	do	Springs, bed, device for forming the eyes of	Oct. 23, 1866.
	White, N. C. (*See* Dutton, R. B., assignor.)			
57,418	White, Nelson J., assignor to Samuel C. Woodward	Lawrence, Mass	Oil cups, steam-engine	Aug. 21, 1866.
2,236	White, Rollin	Lowell, Mass	Fire-arms, breech-loading (Reissue)	May 1, 1866.
57,607	Same	Bridgeport, Conn	Ordnance and fire-arms	Aug. 28, 1866.
54,985	White, Samuel	Philadelphia, Pa	Shade hook	May 22, 1866.
	White, Stillman. (*See* Gooding, James B., assignor.)			
56,649	White, Thomas	Quincy, Ill	Stove, heating	July 24, 1866.
57,804	White, Thomas H	Orange, Mass	Knife sharpener	Sept. 4, 1866.
57,233	White Thomas R., and William G. Bedford	Philadelphia, Pa	Tubing, &c., fabric for	Aug. 14. 1866.
54,049	White, William H	West River, Md	Hats and caps	Apr. 17, 1866.
54,799	Same	do	Fans and parasols	May 15, 1866.
54,986	Same	do	Hats and caps	May 22, 1866.
58,328	Same	Kent Island, Md	Hats	Sept. 25, 1866.
58,329	Same	do	Hats	Sept. 25, 1866.
56,302	Whitehead, Edward	Cincinnati, Ohio	Car brake	July 10, 1866.
56,303	Same	do	Pavement	July 10, 1866.
59,804	Same	do	Gutters, iron	Nov. 20, 1866.
60,305	Whitehead, John	Oskaloosa, Iowa	Looms, hand	Dec. 4, 1866.
60,103	Whitehill, Hugh	Newburg, N. Y	Yarn, machine for drying	Nov. 27, 1866.
52,351	Whiteley, William N	Springfield, Ohio	Harvesters	Jan. 30, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,349	Whiteley, William N., jr	Springfield, Ohio	Harvesters	Jan. 30, 1866.
52,350	Same	....do	Harvesters	Jan. 30, 1866.
56,304	Same	....do	Harvesting machines, Pitman-head and crank-wrist box for	July 10, 1866.
57,419	Same	....do	Harvesters	Aug. 21, 1866.
59,302	Same	....do	Harvesters	Oct. 30, 1866.
59,303	Same	....do	Harvesters	Oct. 30, 1866.
53,069	Whitenack, J. H	Somerville, N. J	Harvesters	Mar. 6, 1866.
58,013	Whiteside, J	Coesse, Ind	Fence	Sept. 11, 1866.
60,654	Whiteside, J. M	San Francisco, Cal	Furnace, reverberating	Dec. 18, 1866.
	Whitehurst, J. H. (*See* Stone, George F., assignor.)			
51,885	Whiting, George B	Washington, D. C	Engines, steam	Jan. 2, 1866.
51,886	Same	....do	Valve gear	Jan. 2, 1866.
58,702	Whiting, Horatio	New York, N. Y	Reaping machine	Oct. 9, 1866.
55,753	Whiting, Nathaniel T	Lawrence, Mass	Collars, paper, button-holes for	June 19, 1866.
57,025	Same	....do	Pitchers. (Antedated August 3, 1866)	Aug. 7, 1866.
59,697	Whiting, Stephen B	Pottsville, Pa	Rope-driving machines	Nov. 13, 1866.
52,478	Whitker, Daniel D	Hudson, N. Y	Plane, saw rebate	Feb. 6, 1866.
59,787	Whitling, John H., assignor to J. Bordsleg and M. Hall	Philadelphia, Pa	Iron, sheet, with other metals, coating	Nov. 20, 1866.
58,183	Whitlock, Daniel, assignor to self and James M. Seymour	Newark, N. J	Paper in manufacture of boxes, machines for cutting the corners of.	Sept. 18, 1866.
52,235	Whitlock, J. G	New York, N. Y	Ovens, steam	Jan. 23, 1866.
	Whitlock, Stephen H., and Thomas M. Aspinall. (*See* Aspinall & Whitlock.)			
52,920	Whitman, Owen P	Lynn, Mass	Leather, composition for graining	Feb. 27, 1866.
53,070	Whitmarsh, Asaph	East Bridgewater, Mass	Hay forks, horse	Mar. 6, 1866.
59,752	Whitmore, George E., assignor to self and E. S. Pixley	Housatonic, Mass	Valves, stop, for steam-pipes	Nov. 20, 1866.
55,187	Whitmore, Gilbert E	Boston, Mass	Bolts, spring. (Antedated May 20, 1866)	May 29, 1866.
	Whitmore, N., *et al.* (*See* Hodges, Charles M., assignor.)			
54,472	Whitmore, Nathaniel G., assignor to self and Edward L. Day	Mansfield, Mass	Brush, blacking	May 1, 1866.
55,941	Whitney, A. H	Portland, Maine	Funnels, measuring	June 26, 1866.
54,987	Whitney, A. L	Brooklyn, N. Y	Potato masher	May 22, 1866.
51,985	Whitney, Eli	New Haven, Conn	Fire-arms, revolving	Jan. 2, 1866.
59,110	Same	....do	Fire-arms, double-barrelled	Oct. 23, 1866.
56,305	Whitney, E. P	Stanford, Conn	Meat and vegetable cutter	July 10, 1866.
	Whitney, F. O., *et al.* (*See* Shurtleff, Ashael M., assignor.)			
51,986	Whitney, James A	Maryland, N. Y	Nail, horseshoe, machine	Jan. 9, 1866.
	Whitney, Joel	Winchester, Mass	Planing machines, feed apparatus for (Extension)	Apr. 12, 1866.
51,987	Whitney, J. M	Boston, Mass	Head-rest, portable	Jan. 9, 1866.
60,306	Whitney, Levi H	Vallejo, Cal	Hops, mode of training	Dec. 4, 1866.
58,703	Whitney, Ruel W., and Abner C. Stockin	South Berwick, Maine	Mop head	Oct. 9, 1866.
60,307	Whitney, Samuel A	Glassboro', N. J	Furnaces, melting	Dec. 4, 1866.
59,698	Whitney, Silas M	Galesburg, Ill	Cultivator, coupling for	Nov. 13, 1866.
	Whitney, T. H., and S. A. (*See* Focer, John, assignor.)			
	Whitney, Waldo. (*See* Alger, George A., assignor.)			
58,704	Whiton, D. E	West Stafford, Conn	Chucks	Oct. 9, 1866.

55,026	Whittaker, Thomas, assignor to self and William P. Simpson	Buffalo, N. Y	Vessels, sunken, apparatus for raising	May 22, 1866.
60,308	Whittaker, William M., assignor to self and B. Church	Wallingford, Conn	Dish, butter	Dec. 4, 1866.
52,921	Whittemore, Amos	Cambridgeport, Mass	Vaccinators	Feb. 27, 1866.
58,521	Same	....do	Spikes, split, machinery for making. (Antedated Feb. 21, 1866).	Oct. 2, 1866.
58,520	Whittemore, Amos, assignor to the Cambridge Horse Nail Company	....do	Nails, horseshoe, machinery for making	Oct. 2, 1866.
	Whittemore, David. (*See* Landfear, William R., assignor.)			
	Same.			
	Same. (Reissue.)			
59,884	Whittemore, D. H	Worcester, Mass	Apple parer. (Antedated November 11, 1866)	Nov. 20, 1866.
58,928	Whittemore, D. J	Milwaukee, Wis	Cars, grain, method of unloading	Oct. 16, 1866.
58,184	Whittemore, Thomas, assignor to Edmund G. Lucas	Cambridgeport, Mass	Railway chair	Sept. 18, 1866.
54,458	Whittier, Abel C	Lawrence, Mass	Washing machine	May 1, 1866.
52,236	Whittier, Charles	Roxbury, Mass	Grates, furnace	Jan. 23, 1866.
57,026	Whittingham, Harry	New York, N. Y	Furnace, hot-air	Aug. 7, 1866.
57,027	Same	....do	Furnace, hot-air	Aug. 7, 1866.
57,028	Same	....do	Furnace, hot-air	Aug. 7, 1866.
52,632	Whittlesey, Samuel H	Appleton, Wis	Well borer	Feb. 13, 1866.
58,522	Whittock, Abel	Danbury, Conn	Oven	Oct. 2, 1866.
58,031	Whysall, B., and J. Porritt, assignors to selves and M. M. Livingston.	Port Jervis, N. Y	Springs, tempering	Sept. 11, 1866.
	Whyte, Ebenezer, and Richard S. Rhodes. (*See* Rhodes & Whyte.)			
	Wicker, Abram C. (*See* Hurlbut, George W., assignor.)			
2,143	Wickersham, William	Boston, Mass	Nails, machine for cutting (Reissue)	Jan. 2, 1866.
52,479	Same	....do	Nail machines	Feb. 6, 1866.
	Same. (*See* Newton, Jeremiah L., assignor.)			
	Wickes, Homer, and John Bodine Frazier. (*See* Frazier & Wickes.)			
55,754	Wickham, Horace, jr	Chicago, Ill	Alarm, burglar	June 19, 1866.
60,603	Wickham, Rollin C	Pawlet, Vt	Cans, milk	Dec. 18, 1866.
57,608	Wicks, Frank	Upper Sandusky, Ohio	Horse-power apparatus for elevating hay, &c	Aug. 28, 1866.
57,609	Same	....do	Hay forks, horse	Aug. 28, 1866.
55,610	Wicks, Frank, and F. F. Fowler	....do	Elevators, hay, tackle-blocks for	Aug. 28, 1866.
59,111	Wicks, L. J	Bridgeton, N. J	Cans, fruit	Oct. 23, 1866.
53,238	Widgeon, J. R., assignor to self and Fred E. Frey	Bucyrus, Ohio	Boiler-feeders, automatic	Mar. 13, 1866.
52,633	Widman, Joseph, and French Millica	El Paso, Ill	Ploughs	Feb. 13, 1866.
52,922	Widmayer, William	New York, N. Y	Stair, spiral	Feb. 27, 1866.
54,238	Widney, James	Carlisle, Pa	Car coupling	Apr. 24, 1866.
58,523	Wiedersheim, John A	Philadelphia, Pa	Caster for furniture	Oct. 2, 1866.
	Same. (*See* Smith, Charles D., assignor.)			
58,014	Wier, Thomas T	Gallatin, Mo	Wagon brakes	Sept. 11, 1866.
55,755	Wiggin, James L., assignor to J. W. Hoard and G. B. Wiggin	South New Market, N. H	Nail-plate feeders	June 19, 1866.
58,306	Wiggin, J. L., and E. Folsom	....do	Lubricating apparatus	July 10, 1866.
60,309	Wiggin, Jay J	Cincinnati, Ohio	Composition for furniture and other purposes	Dec. 4, 1866.
60,310	Same	....do	Moulds for plastic material	Dec. 4, 1866.
55,188	Wight, Henry	East Cambridge, Mass	Boots and shoes	May 29, 1866.
	Wigley, John, and Lorenzo C. Dam. (*See* Dam & Wigley.)			
	Wilber, W. B., *et al.* (*See* Bassett, Bearse & Wilber.)			
51,887	Wilbur, Benjamin	Scituate, R. I	Spinning, &c., bobbins for	Jan. 2, 1866.
	Wilbur, Henry O., and William Dickerson. (*See* Dickerson & Wilbur.)			
57,234	Wilcox, A. A	Fair Haven, Conn	Shoe nails	Aug. 14, 1866.
60,451	Wilcox, L. P	Brooklyn, N. Y	Lathe carriers or dogs	Dec. 11, 1866.
58,524	Wilcox, Samuel W	Mendon, Mass	Lamp burners	Oct. 2, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Wilcox, Stephen, jr., and George H. Babcock. (*See* Babcock & Wilcox.)			
52,501	Wilcox, W. E., assignor to self and Luther Moses	Cleveland, Ohio	Car brakes	Feb. 6, 1866.
57,805	Wilcox, William J	New York, N. Y	Lard, cooling	Sept. 4, 1866.
54,800	Wilde, Daniel	Washington, Iowa	Ploughs, corn	May 15, 1866.
59,738	Wilde, Henry	England	Magneto-electric machine	Nov. 13, 1866.
56,133	Wilde, Robert	Philadelphia, Pa	Spinning mules	July 3, 1866.
2,247	Wilder, Aretus A	Detroit, Mich	Sawing and edging clap-boards, machines for (Reissue)	May 15, 1866.
58,159	Same	do	Stoves and heaters, ventilating pipe for	Sept. 18, 1866.
54,801	Wilder, Aretus A., and William Gooding	do	Propeller	May 15, 1866.
51,988	Wilder, B. G., S. Wales, and William Nichols	United States army, United States army, Boston, Mass	Silk from living spiders and other silk producers, mode of obtaining.	Jan. 9, 1866.
57,647	Wilder, J. W., assignor to self and Ebenezer Butterick	New York, N. Y	Springs, India-rubber, operating	Aug. 28, 1866.
53,071	Wildman, Russell	Danbury, Conn	Fur blowers	Mar. 6, 1866.
60,104	Wiles, Seba Squire	Santa Clara, Cal	Faucets, measuring	Nov. 27, 1866.
	Wiley, M. G., *et al.* (*See* Hall, Daniel B., assignor.)			
54,802	Wiley, Moses H	Bucksport, Maine	Whitewashing apparatus	May 15, 1866.
54,473	Wiley, Moses H., assignor to self, C. J. Cobb, and P. G. Ames	do	Mop	May 1, 1866.
60,311	Wiley, William H	Fredonia, N. Y	Well and cistern filters	Dec. 4, 1866.
53,072	Wiley, W. W	Edina, Mo	Seeding machine, roller, and harrow combined	Mar. 6, 1866.
52,480	Wilhelm, Charles	Philadelphia, Pa	Lamps	Feb. 6, 1866.
54,239	Wilhelm, John H., and James W. Larimore	Cook county, Ill	Lamp chimney lifter	Apr. 24, 1866.
53,913	Wilkins, H. C	Albany, N. Y	Candy, manufacture of	Apr. 10, 1866.
55,567	Wilkins, John N	Chicago, Ill	Caster for sewing machines	June 12, 1866.
54,803	Wilkins, Joseph I	Virden, Ill	Buckle	May 15, 1866.
55,942	Same	do	Hook, harness	June 26, 1866.
56,134	Wilkinson, Albert S	Pawtucket, R. I	Horseshoes	July 3, 1866.
56,307	Same	do	Horseshoes	July 10, 1866.
56,308	Same	do	Horseshoes	July 10, 1866.
56,309	Same	do	Horseshoes	July 10, 1866.
56,310	Same	do	Horseshoes	July 10, 1866.
56,311	Same	do	Horseshoes, anvil for making	July 10, 1866.
56,475	Same	do	Horseshoes	July 17, 1866.
56,476	Same	do	Horseshoes	July 17, 1866.
56,477	Same	do	Horseshoes	July 17, 1866.
57,029	Same	do	Horseshoes	Aug. 7, 1866.
57,030	Same	do	Horseshoes	Aug. 7, 1866.
57,235	Same	do	Horseshoes	Aug. 14, 1866.
57,236	Same	do	Horseshoes, calks for	Aug. 14, 1866.
57,420	Same	do	Horseshoes	Aug. 21, 1866.
57,611	Same	do	Horses' feet, stoppings for	Aug. 28, 1866.
57,237	Wilkinson, E., jr	Mansfield, Ohio	Eaves troughs while soldering them, device for holding	Aug. 14, 1866.
53,210	Wilkinson, J. H	Kickapoo, Ill	Wagon brakes	Mar. 13, 1866.
54,804	Wilkinson, Jane Maria	Urbana, Ohio	Sandal, adjustable	May 15, 1866.

54,988	Wilkinson, Levi	New Haven, Conn	Tuyeres	May 22, 1866.
59,934	Same	...do	Screw-clamp for bending axletrees	Nov. 20, 1866.
	Wilkinson, Lyman L., and John Hickson. (*See* Hickson & Wilkinson.)			
54,633	Wilkinson, Morris	Burlington, Mich	Planters, corn	May 8, 1866.
52,947	Wilkinson, Walter	Baltimore, Md	Pumps for oil wells	Feb. 27, 1866.
53,073	Same	...do	Wells' oil, packing for	Mar. 6, 1866.
53,209	Wilkinson, John G	Quincy, Ohio	Vehicles, wheeled, propeller	Mar. 13, 1866.
	Willard, G. *et al.* (*See* Shaw, W. Anthony, assignor.)			
55,494	Willard, Horatio, assignor to self and George F. Adams	Plainfield, Ind	Switch, transfer	June 12, 1866.
57,421	Willard, Hosea	Vergennes, Vt	Hay, machines for raking and loading	Aug. 21, 1866.
57,422	Willard, John	Norwich, Conn	Cans, tin, instruments for opening	Aug. 21, 1866.
57,612	Willcox, George L	Hebron, Conn	Sawing machines	Aug. 28, 1866.
56,650	Willcox, James M	Glen's Mills, Pa	Paper, safety	July 24, 1866.
59,493	Willcox, William G	Waterloo, Wis	Smut machines	Nov. 6, 1866.
52,776	Williams, A	Wellsville, Ohio	Countersink	Feb. 20, 1866.
56,312	Williams, Aaron W. C	Hartford, Conn	Labelling spools, machine for	July 10, 1866.
55,189	Williams, Daniel H	Antwerp, N. Y	Clinching iron	May 29, 1866.
51,888	Williams, David F	Cumberland, R. I	Clothes wringer	Jan. 2, 1866.
56,651	Williams, Frank A., John H., and Daniel G	Cincinnati, Ohio	Scrapers, cabinet makers'	July 24, 1866.
56,478	Williams, F. H	Syracuse, N. Y	Trap, stench	July 17, 1866.
56,479	Same	...do	Trap, stench	July 17, 1866.
59,699	Williams, G	West Middlebury, Ohio	Jars, fruit	Nov. 13, 1866.
56,480	Williams, George	Sterling, Colorado Territory	Car, ore and timber, for mines	July 17, 1866.
56,481	Same	...do	Elevators	July 17, 1866.
55,968	Williams, H. L., assignor to National Knitting Machine Company	Seneca Falls, N. Y	Knitting machines	June 26, 1866.
59,700	Williams, J. H	Sandusky, Ohio	Mills, cider	Nov. 13, 1866.
58,160	Williams, Job T	Philadelphia, Pa	Toy	Sept. 18, 1866.
53,514	Williams, John	Troy, N. Y	Sewing machines, feeding device for	Mar. 27, 1866.
58,526	Williams, John A	Meridian, Miss	Press, baling	Oct. 2, 1866.
56,652	Williams, Joshua H	East Craftsbury, Vt	Washer, potato	July 24, 1866.
59,304	Williams, J. M	Connersville, Ind	Water-wheels	Oct. 30, 1866.
53,370	Williams, Martin	Charleston Four Corners, N. Y.	Threshing and winnowing machines	Mar. 20, 1866.
53,720	Williams, S. B	Wheeling, West Va	Smut machines	Apr. 3, 1866.
54,989	Williams, Samuel P	Sheridan, N. Y	Fence	May 22, 1866.
	Williams, Samuel T. (*See* Munson, Albert L., assignor.)			
54,826	Williams, Seth, assignor to Henry C. and C. T. Williams	Foxboro', Mass	Pipes, curved mould for casting	May 15, 1866.
52,332	Williams, William L	New York, N. Y	Splitting machines, wood	Jan. 30, 1866.
58,525	Williamson, David	...do	Fire-arms, breech-loading	Oct. 2, 1866.
55,943	Williamson, John A	Lafayette, Ind	Railroad switch	June 26, 1866.
	Williamson, J. H. (*See* Beemer, Levi, assignor.)			
59,701	Williamson, Theodore A., and Charles A. Richardson	Alleghany, Pa	Rolling-pin, &c	Nov. 13, 1866.
54,050	Willis, C. W., and A. Stephenson	Cambridge City, Ind	Hay-forks, horse	Apr. 17, 1866.
52,937	Willis, Newil J., assignor to self and Ammi Brown	Boston, Mass	Bed bottom, spring	Feb. 27, 1866.
55,592	Willis, William, assignor to Vincent Brooks	England	Photographic process for copying drawings, &c	June 12, 1866.
60,312	Willms, J. P	Baltimore, Md	Pessaries	Dec. 4, 1866.
	Willoby, Daniel W. (*See* Bingham, Alanson and Asmore A, ass'ors.)			
57,238	Wills, Alexander C., and Hugh Sharp	Marlton, N. J	Vinegar, manufacture of	Aug. 14, 1866.
55,190	Wills, William W	Janesville, Wis	Wrenches, pipe	May 29, 1866.
57,806	Willson, Henry F	Elyria, Ohio	Wagons, &c., eveners for poles for. (Antedated August 15, 1866)	Sept. 4, 1866.
55,944	Wilmot, Samuel R	Bridgeport, Conn	Metal, articles of, dies for capping and raising	June 26, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
56,313	Wilmot, Samuel R.	Bridgeport, Conn.	Metal, sheet, vessels, dies for forming bead on the edge of	July 10, 1866.
58,527	Same	do	Skirts, hoop, elasps for	Oct. 2, 1866.
60,452	Same	do	Lanterns	Dec. 11, 1866.
56,844	Wilsey, J. E., and E. Forbes	Chicago, Ill. / Scotland	Bed bottoms, spring	July 31, 1866.
57,031	Wilsey, J. E., and E. Forbes	Chicago, Ill	Bed bottom	
	Wilson, Albert Lucien, and Asa Scott Tiffany. (*See* Tiffany & Wilson.)			
	Wilson, Allen B.	Waterbury, Conn.	Sewing machines (Extension)	June 14, 1866.
53,074	Wilson, Arthur Yates	Chicago, Ill.	Funnels and cocks, combined	Mar. 6, 1866.
53,721	Wilson, Charles A.	Cincinnati, Ohio	Steam gauges	Apr. 3, 1866.
56,135	Same	do.	Steam gauges	July 3, 1866.
58,015	Wilson, Dickson, and Henry Fairbanks	Adams county, Ill.	Spinning machines, hand	Sept. 11, 1866.
59,494	Wilson, Edward	Northbridge, Mass.	Carriages, hold-back for	Nov. 6, 1866.
52,481	Wilson, Elisha	New Haven, Conn.	Telegraphs, sounding	Feb. 6, 1866.
57,032	Same	do.	Telegraph sounders	Aug. 7, 1866.
57,807	Wilson, George W.	Abingdon, Ill.	Car coupling	Sept. 4, 1866.
56,653	Wilson, Henry, and Wilson, James	Paterson, N. J. / New York, N. Y.	Bottles, fastening for	July 24, 1866.
	Wilson, H. C., *et al.* (*See* Hill, Edwin H., assignor.)			
54,240	Wilson, Ira E., and John Lowe	Providence, R. I.	Eyelet machines	Apr. 24, 1866.
60,453	Wilson, James	Wilmington, Del.	Stove-pipe elbow	Dec. 11, 1866.
2,486	Wilson, J. A.	Springfield, Mass.	Burial case (Design)	Oct. 2, 1866.
	Wilson, J. B., and J. Elder. (*See* Prouty, Russell, assignor.)			
55,027	Wilson, James G., assignor to the Union Seamless Knitting Machine Company.	New York, N. Y.	Knitting machines	May 22, 1866.
55,434	Wilson, James G., assignor, through mesne assignments, to the Union Seamless Knitting Machine Company.	do.	Knitting machines	June 5, 1866.
	Wilson, James H., and Thomas Price. (*See* Price & Wilson.)			
	Wilson, John, and C. D. Walters. (*See* Walters & Wilson.)			
52,482	Wilson, John I.	Abingdon, Ill.	Furrowing machine	Feb. 6, 1866.
57,613	Wilson, Joseph	Manchester, N. H.	Steam traps	Aug. 28, 1866.
54,634	Wilson, Nimrod E.	Central Station, West Va.	Churns	May 8, 1866.
	Wilson, Oren E. (*See* Murphy, M. P., assignor.)			
59,702	Wilson, Richard	Cold Spring, N. Y.	Pipe, gas, joints. (Antedated November 1, 1866)	Nov. 13, 1866.
	Wilson, R. B., *et al.* (*See* Dayton, Henry G., assignor.)			
55,435	Wilson, Silas H., assignor to William H. Brown	Auburn, N. Y.	Harvesters, &c., pitman heads for	June 5, 1866.
58,705	Wilson, William	Boston, Mass.	Stove, cooking	Oct. 9, 1866.
	Wilson, W. V., and T. Storey. (*See* Storey & Wilson.)			
54,990	Wimmer, William	Elizabethport, N. J.	Bits in braces, securing	May 22, 1866.
53,239	Winans, W. H., assignor to self and W. R. Finch	Coxsackie, N. Y.	Alarm, burglar, for windows	Mar. 13, 1866.
55,516	Winans, William, Louis and Thomas	England	Engines, steam	June 12, 1866.
57,834	Same	do.	Ships, apparatus for trimming	Sept. 4, 1866.
57,835	Same	do.	Ships, coupling for propeller shafts of	Sept. 4, 1866.
57,836	Same	do.	Ships, spindle-shaped, propellers for	Sept. 4, 1866.

58,038	Same	....do	Steam generators	Sept. 11, 1866.
58,743	Winans, William Louis, and Winans, Thomas	England Baltimore, Md.	Rudders to spindle-shaped hulls, application of	Oct. 9, 1866.
58,744	Same	....do	Propeller	Oct. 9, 1866.
52,777	Winant, D. D	Brooklyn, N. Y	Derrick	Feb. 20, 1866.
58,161	Winchell, James F	Springfield, Ohio	Gates	Sept. 18, 1866.
58,706	Same	....do	Harvesters, corn	Oct. 9, 1866.
58,185	Winchell, James F., assignor to self and Joseph Leffler	....do	Jar, fruit	Sept. 18, 1866.
	Winchell, J. F., and E. P. H. Capron. (*See* Capron & Winchell.)			
	Winchester, H., *et al.* (*See* Hatch, Jonathan, assignor.)			
	Winchester, H., and E. M. Day. (*See* Day & Noel, assignors.)			
57,808	Winchester, Oliver F	New Haven, Conn	Fire-arms, magazine	Sept. 4, 1866.
	Same. (*See* Briggs, George W., assignor.)			
	Same. (*See* Smith, James D., assignor.)			
	Same.			
	Same. (*See* King, Nelson, assignor.)			
	Same.			
60,604	Windeck, Albert, and Andrew Runstetler	Peoria, Ill	Planters, corn	Dec. 18, 1886.
57,614	Winegar, Caleb	Union Springs, N. Y	Excavating machine	Aug. 28, 1866.
57,033	Winer, Daniel	Lockport, N. Y	Vessels, propelling apparatus for	Aug. 7, 1866.
53,211	Winfield, John R., and William S. Colwell	Pittsburg, Pa	Stave machines	Mar. 13, 1866.
54,266	Wing, Charles H., assignor to the American Magnesium Company	Newton Corner, Mass	Magnesium for burning, method of preparing	Apr. 24, 1866.
55,568	Wing, Levi, and David Myers	Chicago, Ill	Wardrobe and bedstead	June 12, 1866.
59,112	Winkley, Swain	New York, N. Y	Railways	Oct. 23, 1866.
58,565	Winkley, Swain, assignor to self and Asa Bigelow, jr	....do	Railways, construction of	Oct. 2, 1866.
60,605	Winship, E. B	Racine, Wis	Pumps	Dec. 18, 1866.
	Winship, W. W. (*See* Easter, Samuel, assignor.)			
57,239	Winslow, Jacob D	Wilmington, Del	Fastening shutter	Aug. 14, 1866.
59,305	Same	....do	Clamps, floor	Oct. 30, 1866.
58,330	Winslow, J. L	Portland, Maine	Shaft coupling	Sept. 25, 1866.
54,805	Winslow, Seth C. and Samuel	Worcester, Mass	Clamps, floor	May 15, 1866.
	Winslow, Thomas C. (*See* Goff, Lucius H., assignor.)			
58,528	Winter, Herman, and Frederick W. Newton	Williamsburg, N. Y South Orange, N. J.	Fuel, machine for preparing peat for	Oct. 2, 1866.
57,263	Winter, William, assignor to self, I. Townsend, and T. H. Beacher.	Philadelphia, Pa	Clothes lines, clamp for	Aug. 14, 1866.
52,799	Winter, William W., assignor to self and Stephen Brewer	Cortlandville, N. Y	Driving apparatus, of metal or wood, into the ground	Feb. 20, 1866.
51,989	Winter, William W., and Stephen Brewer	....do	Wells, boring. (Antedated July 9, 1865.)	Jan. 9, 1866.
	Winter, W. W., and S. Brewer. (*See* Brewer & Winter.)			
	Wippich, John, *et al.* (*See* Lovett, Wippich & Wood.)			
54,806	Wirsching, A., and William Zoehe	Williamsburg, N. Y	Billiard register	May 15, 1866.
	Wirt, J. H., and B. J. McAfee. (*See* McAfee & Wirt.)			
	Wirt, William W., and John D. Edmond. (*See* Edmond & Wirt.)			
58,707	Wirts, S. M., and F. Swift	Medina, Mich	Separators, grain	Oct. 9, 1866.
55,408	Wise, Peter A	Stockbridge, N. Y	Hay forks, horse. (Antedated December 5, 1865)	June 5, 1866.
55,569	Wise, Tobias, and John W	Adrian, Mich	Sheep shears	June 12, 1866.
55,409	Wisner, Joel	Aurora, N. Y	Broom	June 5, 1866.
54,635	Wister, Jacob	Greencastle, Pa	Manure, &c., mode of grinding bones for	May 8, 1866.
57,240	Wiswall, Alvah	New York, N. Y	Springs, door	Aug. 14, 1866.
59,495	Witbeck, Wynant	Troy, N. Y	Carriage wheels, box setters for	Nov. 6, 1866.
	Withington, Cooley & Co. (*See* Hinton, Spencer, assignor.)			
52,102	Witsil, George L	Philadelphia, Pa	Well-boring apparatus. (Antedated January 3, 1866)	Jan. 16, 1866.
60,105	Same	....do	Mills, grinding	Nov. 27, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
54,653	Witsil, George L., assignor to Charles A. Waterman	Philadelphia, Pa	Ice pick, nut-cracker, &c	May 8, 1866.
55,436	Witsil, George L., assignor to self and John F. Cabot	....do.	Lamp chimneys	June 5, 1866.
56,153	Witsil, George L., assignor to self, John N. Olcott, and Warren S. Smith.	....do.	Churns	July 3, 1866.
59,532	Witsil, George L., assignor to self and William Darman	....do.	Washing machine	Nov. 6, 1866.
55,191	Woeber, A. and G.	Davenport, Iowa	Thill coupling	May 29, 1866.
55,192	Same	....do.	Thill coupling	May 29, 1866.
60,106	Wolcott, H. H	Yonkers, N. Y	Fire-arms, breech-loading. (Antedated November 22, 1866)	Nov. 27, 1866.
59,496	Wolf, Albert G	Mystic River, Conn	Blocks, manner of strapping	Nov. 6, 1866.
60,107	Wolf, Christian	Rantoul, Ill	Collar, horse	Nov. 27, 1866.
2,318	Wolf, David	Lebanon, Pa	Reaping machines (Reissue)	July 17, 1866.
52,103	Wolf, George	Williamsport, Md	Churns	Jan. 16, 1866.
54,241	Same	....do.	Traps, animal	Apr. 24, 1866.
52,237	Wolf, Hulsey B	Truro, Ill	Stripper, sorghum cane	Jan. 23, 1866.
	Wolf, Jacob G. (*See* Long, Josiah, assignor.)			
58,708	Wolf, Martin	New York, N. Y	Looms, narrow ware, take-up for	Oct. 9, 1866.
56,654	Wolfe, John N	Lancaster, Ohio	Water-wheels	July 24, 1866.
52,104	Wolfe, Thomas	Girard, Ill	Ploughs, sulky	Jan. 16, 1866.
56,840	Wolfenden, James	Jersey City, N. J	Lathes, tool and rest-holder for	July 31, 1866.
59,306	Wolff, Frederick	New York, N. Y	Leeches, artificial	Oct. 30, 1866.
56,482	Wolff, L. H	Detroit, Mich	Trunks	July 17, 1866.
55,400	Woliston, Philip N	Springfield, Ohio	Brick machine	June 5, 1866.
55,570	Wonderly, J. H	Williamsport, Pa	Wood-work, machine for sand-papering	June 12, 1866.
	Wonson, Augustus H., and James Gamage Tarr. (*See* Tarr & Wonson.) Reissue.			
57,809	Wood, Benjamin L	Taunton, Mass	Carriage thill	Sept. 4, 1866.
	Wood, Charles, and H. B. Gallup. (*See* Gallup & Wood.)			
54,636	Wood, David S	Delaware, Wis	Pumps	May 8, 1866.
56,314	Same	....do.	Pump pistons	July 10, 1866.
53,075	Wood, Frederick	Bridgeport, Conn	Carriage doors, landau	Mar. 6, 1866.
	Wood, F. W., *et al.* (*See* Keck, Rudolph, assignor.)			
57,241	Wood, George M	Decatur, Ill	Bolt, door	Aug. 14, 1866.
57,423	Same	....do.	Locks	Aug. 21, 1866.
58,929	Same	....do.	Bolts, keeper for	Oct. 16, 1866.
60,108	Wood, Ira	Woodstock, Vt	Tanning	Nov. 27, 1866.
	Wood, James, *et al.* (*See* Lovett, Wippich & Wood.)			
57,424	Wood, James B	Lansingburg, N. Y	Valves, steam	Aug. 21, 1866.
54,991	Wood, John	Brooklyn, N. Y	Glass bottles, means for holding. (Antedated May 10, 1866)	May 22, 1866.
59,113	Wood, John	North Bloomfield, N. Y	Rakes, horse	Oct. 23, 1866.
57,425	Wood, Joseph S	Philadelphia, Pa	Gas regulators	Aug. 21, 1866.
52,105	Wood, S. W	Cornwall, N. Y	Cartridge retractor for breech-loading fire-arms	Jan. 16, 1866.
60,313	Same	....do.	Grain, mode of conveying	Dec. 4, 1866.
	Wood, Thomas. (*See* Klein, C. C., assignor.) Design.			
56,655	Wood, Twentyman	Westport, Conn	Burners, coal oil	July 24, 1866.
	Wood, William I., and S. Hill. (*See* Hill & Wood.) Reissue.			

57,426	Woodard, A	Bangor, Maine	Suspenders	Aug. 21, 1866.
57,810	Woodard, L. E	Cohocton, N. Y	Wagon brakes	Sept. 4, 1866.
58,930	Woodard, L. E	....do	Hinge, gate	Oct. 16, 1866.
57,242	Woodbridge, Sylvester	Benecia, Cal	Tilling the soil, machine for	Aug. 14, 1866.
56,681	Woodburn, Jacob, assignor to self and Thomas Scott	St. Louis, Mo	Carriage wheels	July 24, 1866.
60,606	Woodbury, Edmund F., assignor to self and H. A. Strong	Rochester, N. Y	Whips	Dec. 18, 1866.
59,497	Woodbury, George E	Cambridge, Mass	Stamp, hand	Nov. 6, 1866.
56,656	Woodbury, James A	Boston, Mass	Planing machine	July 24, 1866.
	Same. (*See* Evans, Andrew A., assignor.) Reissue.			
	Same.			
	Same.			
58,519	Woodbury, John D	Wilson, N. Y	Racks, sheep	Oct. 2, 1866.
54,051	Woodbury, Joseph P	Boston, Mass	Car trucks, locomotive	Apr. 17, 1866.
52,106	Woodbury, Nathaniel	South Danvers, Mass	Wrench and drill	Jan. 16, 1866.
53,089	Woodbury, Oscar D., assignor to Thomas B. De Forest	Derby, Conn	Lamps	Mar. 6, 1866.
	Woodbury, William. (*See* Bray, Mellen, assignor.)			
52,634	Woodbury, William, assignor to self and Mellen Bray	Chelsea, Mass	Boats, fishing, self-adjusting pulley for	Feb. 13, 1866.
55,213	Same	....do	Sails, fore-and-aft, bending	May 29, 1866.
52,803	Woodbury, W. Bentley	Manchester, England	Printing, photograph, mode of	Feb. 20, 1866.
52,923	Woodford, Erastus S	Winchester, Conn	Bowpins, ox	Feb. 27, 1866.
59,327	Woodford, H. E. and C. W., assignors to self and P. S. Whitcomb	Keeseville, N. Y	Nail, horseshoe, machine	Oct. 30, 1866.
59,146	Woodford, James, and William H. Bancroft, assignor to William H. Bancroft and W. L. Ward.	Portland, Wis	Steam generators	Oct. 23, 1866.
55,437	Wooding, Henry C., assignor to self and L. W. Turner	Wallingford, Conn	Axes to their handles, attaching	June 5, 1866.
	Woodman, Charles Eugene. (*See* Bailey, John C., assignor.)			
2,202	Woodman, Horace	Biddeford, Maine	Carding engine, machinery for cleaning the top flats of. (Reissue.)	Mar. 13, 1866.
55,410	Woodman, H. T	Dubuque, Iowa	Bolts, sash and door	June 5, 1866.
58,530	Same	....do	Filter and cooler, combined	Oct. 2, 1866.
52,778	Woodring, John W	Greensburg, Ky	Liniment	Feb. 20, 1866.
54,827	Woodrough, Joseph, assignor to Woodrough & McParlin	Hamilton, Ohio	Saws	May 15, 1866.
56,841	Woodruff, A. H	Lansing, Iowa	Valves, slide	July 31, 1866.
60,655	Woodruff, George H	Jerseyville, Ill	Roller and harrow, combined	Dec. 18, 1866.
	Woodruff, James E., *et al.* (*See* Rowley, Sloane & Woodruff.)			
56,483	Woodruff, James O	Albany, N. Y	Casks, apparatus for applying liquids to	July 17, 1866.
58,016	Woodruff, Luther J	Mohawk, N. Y	Carriage seat	Sept. 11, 1866.
	Woodruff, O. F., and Charles W. Hills. (*See* Hills & Woodruff.)			
57,243	Woodruff, William P	New York, N. Y	Piston rods, packing for. (Antedated August 9, 1866)	Aug. 14, 1866.
58,162	Woods, F. M	York, Ill	Pens, sheet-metal, machines for wiring. (Antedated Sept. 2, '66)	Sept. 18, 1866.
58,032	Woods, George, assignor to H. Mason, E. Hamlin, L. Mason, jr., and D. J. Mason.	Cambridge, Mass	Musical instruments	Sept. 11, 1866.
58,561	Woods, George V., assignor to Austin White	Belchertown, Mass	Neck-ties, collars, and bosoms, combined	Oct. 2, 1866.
54,807	Woods, Oliver E	Philadelphia, Pa	Arms, slinging	May 15, 1866.
60,314	Woods, Thomas	Jessamine county, Ky	Drills, stone	Dec. 4, 1866.
58,931	Woodside, M. A	Georgetown, Cal	Ores, machine for washing	Oct. 16, 1866.
59,498	Woodville, John	Cincinnati, Ohio	Planes, carpenters'	Nov. 6, 1866.
52,107	Woodward, A. B	Alfred Centre, N. Y	Flask, vulcanizing	Jan. 16, 1866.
2,311	Woodward, David A	Baltimore, Md	Camera, solar (Reissue)	July 10, 1866.
60,109	Same	....do	Lenses, fluid	Nov. 27, 1866.
57,427	Woodward, Edward H	New York, N. Y	Oil from fish, process for extracting	Aug. 21, 1866.
56,315	Woodward, G. B., and M. L. Smith	Bolivar, N. Y / Scio, N. Y	Vehicles, wheel	July 10, 1866.

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
52,779	Woodward, Joseph	Springfield, Mass	Paste for bookbinders, &c., prepared	Feb. 20, 1866.
	Woodward, Samuel C. (*See* White, Nelson J., assignor.)			
54,077	Woodward, Stephen W., assignor to self and S. Hume	Buffalo, N. Y	Window blinds, device for opening and closing	Apr. 17, 1866.
	Woodward, W. E. (*See* Josselyn, Henry S., assignor.)			
57,811	Woodworth, Alfred	North White Creek, N. Y	Water elevators	Sept. 4, 1866.
56,136	Woodworth, George D	Chicago, Ill	Grain coolers	July 3, 1866.
53,515	Woodworth, S. F	Iowa Falls, Iowa	Metal, sheet, spouts, machines for swaging. (Antedated March 19, 1866.)	Mar. 27, 1866.
	Woolcocks, Thomas J., and William Ostrander	New York, N. Y	Speaking tubes (Extension)	May 1, 1866.
56,316	Woolever, James	Peoria, Ill.	Separators, grain	July 10, 1866.
53,914	Woolf, Jacob	Burr Oak, Mich	Power, transmitting	Apr. 10, 1866.
	Wooley, Smith R. (*See* Covert, Henry H., assignor.)			
	Woolsey, E. J., and George B. Hartson. (*See* Hartson & Woolsey.) Same. (Reissue.)			
57,428	Wootten, J. E.	Philadelphia, Pa.	Winding apparatus for inclined planes	Aug. 21, 1866.
58,932	Wootten, John E	....do.	Slate, method of quarrying	Oct. 16, 1866.
60,454	Same	Cressona, Pa	Padlocks	Dec. 11, 1866.
54,992	Wootton, John	Boonton, N. J.	Flying machine	May 22, 1866.
	Worby, William, *et al.* (*See* Fowler, Worby & Greig.)			
60,315	Worcester, Benjamin	Waltham, Mass	Scale pencils	Dec. 4, 1866.
	Worcester, Benjamin, and J. Herbert Shedd. (*See* Shedd & Worcester.)			
60,316	Worcester, James M	Oberlin, Ohio	Wool fleeces, apparatus for tying and packing	Dec. 4, 1866.
55,756	Worcester, Joseph	Newport, Ky	Cocks, globe	June 19, 1866.
56,317	Worcester, K. F., and J. B. Perkins	Nashua, N. H. / Hollis, N. H	Sifters, flour	July 10, 1866.
	Worcester, W. E. C., and Samuel J. Shaw. (*See* Shaw & Worcester.)			
57,429	Works, A. J	Fair Haven, Conn.	Burning liquid hydro-carbons, apparatus for	Aug. 21, 1866.
56,154	Worrall, John, assignor to self and Jesse Cudworth	New Haven, Conn	Refrigerators	July 3, 1866.
52,238	Worrall, J. P	Philadelphia, Pa.	Branding tool	Jan. 23, 1866.
56,842	Worrall, Thomas D.	Central City, Col. Ter	Furnace for desulphurizing ores	July 31, 1866.
57,430	Same	....do.	Quartz, apparatus for desulphurizing	Aug. 21, 1866.
57,812	Same	New York, N. Y	Gas, apparatus for carburetting	Sept. 4, 1866.
58,709	Same	....do.	Speculums	Oct. 9, 1866.
	Same. (*See* Bassett, John A., assignor.) Reissue.			
56,657	Worthen, William E	....do.	Valves, rotary	July 24, 1866.
	Worthington, Joseph, and William Boulton. (*See* Boulton & Worthington.)			
54,242	Wrangham, T. J	Benson, Vt	Well windlass	Apr. 24, 1866.
56,843	Wren, William C., and William Barker	Brooklyn, N. Y	Gas from petroleum, apparatus for the manufacture of	July 31, 1866.
	Wright & Smith. (*See* Smith, Charles, assignor.)			
2,370	Wright, Benjamin	Hudson, Mich	Washing machine (Reissue)	Oct. 2, 1866.
	Wright, Benjamin F. (*See* Steadman, T. S., assignor.) Reissue.			
58,531	Wright, Charles E	Auburn, N. Y	Cherry-stoner	Oct. 2, 1866.

52,780	Wright, Edward	Worcester, Mass	Looms, let-off for	Feb. 20, 1866.
5 8,033	Wright, E. B., assignor to E. D. Finch and William H. Russell	Cincinnati, Ohio	Soda fountain	Sept. 11, 1866.
56,658	Wright, Francis	Galesburg, Ill	Piston-rod packing	July 24, 1866.
59,114	Wright, G. C	Westfield, Ohio	Fence, portable	Oct. 23, 1866.
52,800	Wright, George F., assignor to self and William Orr, jr	Clinton, Mass	Paper boxes, fastening for	Feb. 20, 1866.
	Wright, George F., and William Orr, jr. (*See* Orr & Wright.)			
	Wright, Henry. (*See* De Graw, Henry N., assignor.)			
53,076	Wright, Hugh	Pittsburg, Pa	Jug tops	Mar. 6, 1866.
59,935	Wright, L. C., assignor to Warren Chrysler	Lockport, N. Y	Clothes dryers	Nov. 20, 1866.
54,993	Wright, Larnard M	Fort Edward, N. Y	Paper pulp, apparatus for washing	May 22, 1866.
55,193	Wright, Lemuel Wellman	Thorndike, Mass	Ordnance. (Antedated May 16, 1866)	May 29, 1866.
59,115	Wright, Lewis R	Cohocs, N. Y	Planter, seed	Oct. 23, 1866.
2,202	Wright, Lysander, assignor to self and Charles B. Smith	Newark, N. J	Sawing machine, scroll (Reissue)	Mar. 13, 1866.
54,808	Wright, M. B	West Meriden, Conn	Stove, foot	May 15, 1866.
52,239	Wright, Nelson	New York, N. Y	Photographic apparatus	Jan. 24, 1866.
59,885	Wright, N. A	Prairie du Chien, Wis	Strainer, milk	Nov. 20, 1866.
59,116	Wright, R. and I	Franklin Township, Pa	Hay, machines for raking and loading	Oct. 23, 1866.
2,338	Wright, Ramson C	Meadville, Pa	Journal box, railway (Reissue)	Aug. 14, 1866.
53,755	Wright, Robert D., assignor to self and L. B. Holland	St. Louis, Mo	Engines, rotary. (Antedated March 21, 1866)	Apr. 3, 1866.
59,733	Wright, Thomas, assignor to self and R. Vose	New York, N. Y	Broom	Nov. 13, 1866.
56,682	Wright, William F., assignor to self and Edwin Blood	Nashua, N. H	Paper, enamelled, machine for polishing	July 24, 1866.
59,886	Wright, William	New York, N. Y	Engine, steam cut-off valve gear	Nov. 20, 1866.
59,887	Same	....do	Valve gear, cut-off, variable	Nov. 20, 1866.
60,110	Wright, William, assignor to John H. Cheever	....do	Quartz mill stamp	Nov. 27, 1866.
	Wright, William, and Charles K. Brown. (*See* Brown & Wright.)			
52,483	Wright, William C	Trenton, N. J	Wood, bending	Feb. 6, 1866.
56,137	Wright, W. G	Hornellsville, N. Y	Wells, tubular	July 3, 1866.
56,503	Wright, William M., assignor to self and James E. Pilkington	Baltimore, Md	Gas, apparatus for carburetting	July 17, 1866.
60,317	Wusson, William H	Aurora, Ill	Lathes, wood	Dec. 4, 1866.
	Wyatt, L. D., *et al.* (*See* Shawcross, T. F., assignor.)			
	Wyatt, Thomas, and Charles Medbury. (*See* Medbury & Wyatt.)			
57,054	Wybell, J. C., assignor to self and F. N. Bixby	West Meriden, Conn	Lathes, turning	Aug. 17, 1866.
2,204	Wyckoff, Arcalous	Elmira, N. Y	Augers, hollow (Reissue)	Mar. 13, 1866.
53,722	Same	....do	Augers, hollow	Apr. 3, 1866.
	Wyckoff, George W., and Nelson Read. (*See* Read & Wyckoff.)			
53,723	Wyckoff, William C	Brooklyn, N. Y	Stamps, postage and revenue	Apr. 3, 1866.
58,532	Wyckoff, William K	Ripon, Wis	Composition of matter	Oct. 2, 1866.
52,353	Wynkoop, L. D	Owassa, Mich	Water wheels	Jan. 30, 1866.
54,994	Yager, Charles E	Hudson, N. Y	Sieve, flour	May 22, 1866.
59,117	Yager, John H	Trenton, Ohio	Manual, power	Oct. 23, 1866.
60,111	Yale, Charles O	New York, N. Y	Sewing machines, marking device for	Nov. 27, 1866.
	Yale, C. W., and J. H. Mears. (*See* Mears & Yale.)			
52,484	Yale, Linus, jr	Shelburne Falls, Mass	Safes. (Antedated December 9, 1865)	Feb. 6, 1866.
57,813	Yapp, William	Cleveland, Ohio	Eaves trough	Sept. 4, 1866.
54,052	Yates, Joseph	Mott Haven, N. Y	Peat, and feeding it to furnaces, method of preparing	Apr. 17, 1866.
57,615	Yates, Samuel	Clarence, Iowa	Eaves troughs, machine for manufacturing	Aug. 28, 1866.
60,607	Yates, Theodore	Milwaukee, Wis	Fire-arms, breech-loading	Dec. 18, 1866.
60,318	Yates, Thomas	Dubuque, Iowa	Harvesters, corn	Dec. 4, 1866.
56,138	Yates, T. L	Utica, N. Y	Sewing machines	July 3, 1866.
54,243	Yeilding, Richard, assignor to self and Henry Gage	Ypsilanti, Mich	Burning tar, apparatus for	Apr. 24, 1866.
52,354	Yeiser, F	Danville, Ky	Motion, transmitting	Jan. 30, 1866.
	Yeoman, S. B. (*See* Sager, M. L., assignor.)			

List of patentees of inventions, designs, and reissues, 1866—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
53,516	Yerks, Silas D	Downington, Pa.	Houses, dairy	Mar. 27, 1866.
57,431	Same	....do.	Tongs and poker, combined	Aug. 21, 1866.
59,307	Yerty, Henry	Sidney, Ohio	Alarm, burglar	Oct. 30, 1866.
59,788	Yewdall, John and William	Philadelphia, Pa.	Wool, machine for washing and drying	Nov. 20, 1866.
54,459	York, Eli	Windsor, Ill.	Fence	May 1, 1866.
56,318	Yorks, Robert M	Schoolcraft, Mich.	Washing machine	July 10, 1866.
59,703	Same	....do.	Planters, corn	Nov. 13, 1866.
	Yost, G. W. N., and J. Densmore. (*See* Densmore & Yost.)			
	Same.			
	Yost, G. W. N., and J. and A. Densmore. (*See* Densmore & Yost.)			
60,455	Youmans, James, and John Reed	Davenport, Iowa	Burner, hydrocarbon, for heating purposes	Dec. 11, 1866.
59,499	Young, Adam	Millstadt, Ill.	Cultivators	Nov. 6, 1866.
	Young. B., *et al.* (*See* Dayton, Henry G., assignor.)			
54,637	Young, Benjamin F	Toulon, Ill.	Cultivators	May 8, 1866.
55,945	Young, Benjamin T	Charlestown, Mass.	Boring machines	June 26, 1866.
54,638	Young, Calvin	Auburn, N. Y.	Carriage axles, machine for making	May 8, 1866.
54,639	Same	....do.	Carriage axles, machine for making	May 8, 1866.
56,659	Young, Charles D., and James McLean	Waterloo, N. Y.	Mills, grinding	July 24, 1866.
54,995	Young, Elijah	Fayetteville, Mo.	Drills, seed	May 22, 1866.
56,660	Young, George H	Charlestown, Mass.	Marine car	July 24, 1866.
	Young, Henry, and Martin Stachelin. (*See* Stachelin & Young.)			
55,194	Young, J	Williamsburg, N. Y.	Baths, steam	May 29, 1866.
56,661	Young, John	Adrian, Ohio	Churn	July 24, 1866.
52,924	Young, John C	Newark, N. J.	Saddletree, crouper loop for	Feb. 27, 1866.
55,571	Young, Moses M	Chelsea, Mass.	Screw cutters	June 12, 1866.
56,662	Young, Peter	El Paso, Ill.	Plough, sulky	July 24, 1866.
	Young, Robert W., and N. B. Webster. (*See* Webster & Young.)			
	Reissue.			
52,240	Young, Solomon W	Providence, R. I.	Eyelet blanks, machinery for making	Jan. 23, 1866.
	Young, S. W., *et al.* (*See* Hoard, John W., assignor.)			
58,331	Youngman, J. E	Rockford, Ill.	Evaporator	Sept. 25, 1866.
51,757	Zabel, Max	Milwaukee, Wis.	Ventilators in places, fastening	June 19, 1866.
	Zane, Joseph. (*See* Roach, Francis, assignor.)			
	Zearing, A. C. (*See* Newman, L. L., assignor.)			
53,212	Zeigler, George W	Tiffin, Ohio	Cultivators	Mar. 13, 1866.
58,533	Same	....do.	Cultivator teeth to frames, mode of attaching	Oct. 2, 1866.
	Zeller. William, and John Stephen. (*See* Stephen & Zeller.)			
54,654	Zellner, William, assignor to self, M. M. Rounds, and J. E. Jerold	New York, N. Y.	Steam generators	May 8, 1866.
	Zellner, William, *et al.* (*See* Rounds, M. M., assignor.)			
55,195	Zentmayer, Joseph	Philadelphia, Pa.	Photographic purposes, combination of lenses for	May 29, 1866.
2,264	Zeuner, Charles, assignor to M. Greenwood & Co	Cincinnati, Ohio	Piano stool (Design)	Feb. 13, 1866.
56,663	Zillier, Nicholas	Newcastle, Del.	Screw plates	July 24, 1866.
58,534	Zimmerman, Christian	Collinsville, Ohio	Ploughs	Oct. 2, 1866.
55,758	Zimmerman, William	Oskaloosa, Iowa	Harvesters	June 19, 1866.
56,319	Zimmerman, Carl Friedrich	Philadelphia, Pa	Accordeons	July 10 1866.

60,456	Zinck, Theodore, assignor to self and F. W. Kalbfleisch	New York, N. Y.	Sewing machines, &c., self-regulating tension for	Dec. 11, 1866.
55,572	Zindgraf, George Philip	Philadelphia, Pa.	Mills, paint	June 12, 1866.
57,814	Zink, A.	Lancaster, Ohio	Jacks, lifting	Sept. 4, 1866.
53,213	Zinn, John W.	Caldwell, N. J.	Railroad switch	Mar. 13, 1866.
55,946	Zinn, Joshua H.	Kingston, Tenn	Weighing cars	June 26, 1866.
54,809	Zistel, Louis	Sandusky, Ohio	Hoops of wood, machines for coiling	May 15, 1866.
	Zoehe, William, and A. Wirsching. (*See* Wirsching & Zoehe.)			
	Zoiner, P. W., and C. Harris. (*See* Harris & Zoiner.) Design.			
	Same.			
	Same.			
56,664	Zorger, George	Greensburg, Ind.	Drills, wheat	July 24, 1866.

DESCRIPTIONS AND CLAIMS OF PATENTS

ISSUED IN THE YEAR 1866.

ILLUSTRATED WITH ENGRAVINGS.

No. 51,784.—H. H. ABBE, East Hampton, Conn.—*Call Bell.*—January 2, 1866.—The vertical plunger passes through the axis of the bell, and, by means of its slotted plate, vibrates the clapper, which is pivoted beneath. The blow is repeated as the plunger is again raised by the spiral spring.

Claim.—The oblique slot *a* made in a plate E, or otherwise formed at the lower end of the sliding rod D, in combination with the hammer arm H, pivoted below the bell and the spring G on the rod D.

No. 51,785.—JOHN ADAMS, Pittsburg, Penn.—*Sealing Ring for Preserve Jars.*—January 2, 1866.—A tongue upon the sealing ring projects above the mouth of the jar, and affords a grasp for lifting the ring to admit air underneath and loosen the stopple. The tongue is reached through a notch in the flange of the stopple.

Claim.—First, providing for removing the stopples of preserve jars, which are confined in place by atmospheric pressure, by constructing the India-rubber rings *a* that are interposed between the stopples and the mouths of the jars, with tongues *e*, which are received in slots *c'* formed in the stopples, substantially as described.

Second, constructing the conical stopples B with slots *c'* which are adapted to receive tongues on the sealing rings, substantially as described.

Third, an elastic sealing ring for preserve jars, which has a tongue *e* formed on it, as a new and improved article of manufacture.

No. 51,786.—JOHN AUSTIN, Rockford, Ill.—*Horseshoe.*—January 2, 1866.—One side of the shoe is pivoted to the main portion to render it expansible. The shoe is attached by metallic straps, which are recessed into the hoof, and, passing from the anterior portion, cross behind the heel, and are secured to the sides of the shoe.

Claim.—First, securing a shoe to the animal's foot by means of the metal strap B, constructed in the form shown, and applied to the foot in such a manner as to rest in the recesses cut in the hoof, and secured to the shoe in the manner herein set forth.

Second, a shoe, having one side divided transversely and longitudinally, as shown in Fig. 2, and having the lower portion C pivoted to the main portion of the shoe, substantially as and for the purpose set forth.

No. 51,787.—HENRY N. AVERY, New York, N. Y.—*Latch Fastening.*—January 2, 1866.—The loop on the end of the latch passes over and engages in a notch of the staple. Through a hole in the staple the hasp of a padlock is passed to prevent the withdrawal of the looped latch.

Claim.—As a new article of manufacture, the combined latch and padlock hasp herein described, consisting of the staples *d p*, looped bar *a m*, confining loop *h*, notches and aperture *r*, all constructed and arranged as and for the purposes herein specified.

No. 51,788.—JOHN BADGER, Chicago, Ill.—*Steam Generator.*—January 2, 1866.—The concentric series of vertical and cylindrical water chambers are connected, above by a steam pipe and below by a water pipe, to each other and to a common exterior water reservoir.

Claim.—The series of water chambers D E F and the reservoir C, when connected by the water pipe G and steam pipe H, and all constructed and arranged substantially as and for the purposes herein specified.

No. 51,789.—EPHRAIM BREEMAN, Owego, N. Y.—*Knife Sharpener and Polisher.*—January 2, 1866.—The hand lever, furnished with an abrading material, is pivoted to a jointed post so as to permit the proper presentation to the knife upon the table beneath.

Claim.—The combination of the lever A, with its coatings of emery or other grinding material, and leather or other suitable material, the bed or base H, and table B, and the standard M, and its joints C D E, for the purpose specified.

No. 51,790.—CHARLES BELDEN, Middleburg, Ohio.—*Gang Cultivator.*—January 2, 1866.—The lower edges of the blades are doubled under to form a strengthening rib. The blades are attached in a receding series to a diagonal frame adjustably supported under the axle of the carriage.

Claim.—The blades *n*, constructed as shown, with a rib *p*, and arranged in relation to each other diagonally across the machine, in combination with the standards *m* and diagonal frame C′, substantially as and for the purpose set forth.

No. 51,791.—SYLVESTER BENNETT, Hartford, Conn.—*Broom.*—January 2, 1866.—The butts of the corn brush are fastened to the rebate of the wooden head by an encircling band and nails.

Claim.—In the construction of corn brooms, the combination of the wood head *e*, rebate *a*, corn brush *b*, band *c*, and handle *d*, substantially as described.

No. 51,792.—JOHN I. BOONE, West Milton, Ohio.—*Fruit Dryer.*—January 2, 1866.—The fruit chamber is surrounded by a flue, heated from beneath by the furnace, which has flue holes in its sloping roof.

Claim.—The oven or dry house herein described, consisting of the outer casing A, furnace B, apertures *b*, interior chambers D, and surrounding space or flue C, all constructed and arranged to operate as and for the purposes specified.

No. 51,793.—ISAAC W. BOWERS, Boston, Mass.—*Bending Wood.*—January 2, 1866.—The ends of the timber are encased by the shoes or clamps, which extend nearly to the mid-length of the piece to preserve the cohesion of the fibres. The strap around the exterior curve is passed around the ends of the timber and secured to the clamps.

Claim.—The elongated shoe or clamp A B, with its bridge piece C, between which the timber is wedged or confined while being bent.

Also, bending the strap E around the portion *a* of the shoe or clamp, and securing it thereto by the screw G, substantially as and for the purpose described.

No. 51,794.—D. C. BROWN, Lowell, Mass.—*Loom Harness.*—January 2, 1866.—The harness is made of wire supported by horizontal rods—two at each end. The upper wire is doubled and twisted to form two loops for attachment to the rods above, and a warp loop in the middle. The lower wire is doubled and twisted to pass through the warp eye and afford loops for attachment to the lower rods.

Claim.—Improved heddle, made substantially as described, viz., of the two wires *e* and *f*, bent together and twisted and interlooped as explained, the upper wire in such case having but one holding loop *h* at its two extremities, and a warp eye *g* at its middle, and the lower wire having two holding loops *i i* at its two extremities, and its loop or double at its middle.

Also, the combination and arrangement of the four holding rods *a a b b*, or the same and the bars A B, with a series of metallic heddles formed of two wires *e f* looped together, and having eyes *g h i i*, substantially as explained.

No. 51,795.—JOHN H. BROWN, New York, N. Y.—*Baby Walker and Cradle.*—January 2, 1866; antedated December 28, 1865.—One end of the cradle is pivoted to the posts of the wheeled frame, and the other has a seat, and is supported by springs, which assist the vertical motion imparted to it by a treadle or by the child.

Claim.—The combination of the cradle form *b i* with a seat *a*, pivoted at *c* on post *d*, the frame *e*, and the springs *j* and *k*, substantially as and for the purpose specified.

No. 51,796.—NEWTON BROWN and H. B. GREGG, Gratis, Ohio.—*Device for Superheating.*—January 2, 1866.—The steam is conducted by pipes from the upper part of the boiler into the rear flue, thence under the boiler, and by a transverse pipe through the side of the furnace, for the use of the engine.

Claim.—The arrangement of the pipes A and B, the transverse pipe D, the vertical pipes E, the cross-pipe K, and the pipes H and G, the whole constructed as and for the purpose herein set forth.

No. 51,797.—X. X. BUCKNER, Boonville, Mo.—*Steam Car Brake.*—January 2, 1866.—The brakes are worked by an auxiliary steam cylinder below the boiler, and the brake connections between adjacent cars operate simultaneously with the coupling devices; the spring bumpers hold the train extended to give the brakes their maximum effect.

Claim.—First, the steam cylinder A, placed beneath the boiler of any locomotive, for the purpose of operating the brakes of railroad cars.

Second, the coupling heads C B, for the purpose of uniting the different cars and connecting rods at one operation.

Third, the spring bumpers H, in combination with the bumper rods H′, and rods P and P′, as and for the purpose set forth.

Fourth, the cylinder A, in combination with the piston rod P, connecting rods P′, levers D, and rods E D′ and F, when constructed as and for the purpose set forth.

No. 51,798.—William Burns, assignor to self and James F. Griffin, Chicago, Ill.—*Lantern.*—January 2, 1866.—In the base or neck of a lantern, a spiral spring is arranged to press upon the edge of the lantern globe, and retain it in place.

Claim.—Holding the globe of a lantern in place, by means of a spring or springs, substantially as herein specified and described.

No. 51,799.—Palmer L. Butler, Cape Vincent, N. Y.—*Sash and Frame for Windows.*—January 2, 1866 —Rack plates are attached to the respective sashes, and their cogs engage with a pinion journaled to the casing. The lateral extension of the rack bars into grooves in the casing, furnishes guides for the sash.

Claim.—First, the combination with the sashes B B′, of racks C C, pinions D D, and extension plate *e*, constructed and arranged to operate as and for the purpose set forth.

Second, guiding the sashes in their vertical movements, by means of the rack plates C, and grooves 2, substantially as above described.

No. 51,800.—Ezra Calderwood, Portland, Me.—*Attaching and Detaching Breeching Straps from Shafts of Carriages.*—January 2, 1866.—The breeching strap is attached to a loop on a cylinder which slips upon a stud on the shaft; flanges on the cylinder engage by rotation with the projections on the shaft, compressing a spring, which raises the cylinder and detaches the fastening, when the cylinder is rotated out of engagement with the projections.

Claim.—The combination of the projection H and the shoulders C C with the cylinder A, the spring G, the plunger L, and loop E, all as and for the purposes specified.

No. 51,801.—Simeon B. Castle, Cortlandville, N. Y.—*Mode of Operating Bored Wells.*—January 2, 1866.—The drive point projects from the end of a tube, whose lower end is bevelled on its outer surface. A rod connects the drive point with the drive head, which rests upon the upper end of the tube.

Claim.—The combination of the drive point *a* and the drive head *b* with the connecting rod C, the stone check *f*, as shown at figure 4, and the bevelled pipe *d*, as and for the purposes set forth in the said or above specifications.

No. 51,802.—Benoit Cerf, New York, N. Y.—*Lounge Bedstead.*—January 2, 1866.—The sofa seat is unfolded outwardly, its bottom forming a lateral extension of the bed; pivoted legs support the extended portion, and a hinged headboard and side frame are raised, to complete the bedstead.

Claim.—First, headboard F, combined with, and attached to, a lounge, bureau bedstead, or similar article, substantially in the manner described, and for the purpose set forth.

Second, the frame G, constructed and applied substantially as described, in combination with a lounge, bureau bedstead, or similar article, substantially as and for the purpose set forth.

No. 51,803.—Edmund Childs, Philadelphia, Penn.—*Bolt for Window Shutter.*—January 2, 1866.—The stop of the bolt is supported by a spring, but may be pressed in flush with the face of the plate, so as to permit the withdrawal or insertion of the bolt.

Claim.—Making the stop C of a bolt for a window shutter or door compressible, substantially as and for the purposes described.

No. 51,804.—Cyrus C. Clapp, Hartford, Conn.—*Book Leaf Turner.*—January 2, 1866.—The successive leaves of the book are embraced by spring clips, which are attached to arms whose consecutive movements are effected by the depression of a lever. The lever works a pawl, ratchet, and rack bar, and a detent pin is withdrawn, which releases the wheels in succession; the latter are rotated by cords, and govern the arms, whose clips embrace the edges of the consecutive pages.

Claim.—The combination of the rotating wheels *c*, rack pin and wheels *p l*, key *g*, and elastic cords *r*, with proper connections for operating the same, substantially in the manner as and for the purpose described.

No. 51,805.—David W. Craft, New York, N. Y.—*Salve.*—January 2, 1866.—This salve for salt rheum, tetter, &c., is composed of red precipitate, one ounce; Venice turpentine, three ounces; white lead, six ounces; distilled water, two ounces.

Claim.—The above described medical composition, substantially as and for the purposes set forth.

No. 51,806.—L. J. Crans, Philadelphia, Penn.—*Well Boring Machine.*—January 2, 1866; antedated December 21, 1865.—The devices for operating the drill, raising the detritus from the well, and depositing it in a receptacle for withdrawal, are described in the claim. The rotation of the drill, and the engagement with it of the lifting springs, are produced by the action of water on the screw-nut, which traverses the thread on the drill-stock. The detritus is accumulated in a receptacle capable of independent withdrawal.

Claim.—First, the drill B, in combination with the within-described devices, or equivalents to the same, whereby the said drill may be caught, raised from the rock, and then released from the raising device, substantially as and for the purpose specified.

Second, the drill B, drill-stock A, with its conical-grooved head, in combination with the rod C, spring *c*, and screw-nut D, substantially as described.

Third, the rods or chains E E, combined with the rod C, its screw-nut D, and the operating rod or bar X, substantially as and for the purpose set forth.

Fourth, the blocks *f f'* and *f''*, and the tube *d*, constructed and operating in combination with the casings G and H, substantially as described.

Fifth, the cutter E, with a cutting edge of the shape substantially as shown and described.

No. 51,807.—HORACE CULVER, Richfield, Ohio.—*Lifting Jack.*—January 2, 1866.—Of the triped on which the fulcrum of the lever is imposed, two members are hinged to the base piece, and the third is a prop, which engages with notches in the base. The lever is maintained at the required point of depression by a notched post pivoted to the base.

Claim.—The combination and arrangement of the bed piece A, standards B, prop D, lifting lever C, and locking bar E, substantially as shown and described.

No. 51,808.—ANDREW J. CURTIS, Winterport, Me.—*Carriage Wheel.*—January 2, 1866.—The tire is hooked to a stud on the socket in the rim, and upon the hook of the screw-bolt diametrically opposite; the screwing up of the bolt tightens one-half the tire, and the remainder is drawn closely to the rim by another screw-bolt, near the starting point.

Claim.—The combination and arrangement, substantially as hereinbefore explained, of one or more screw-bolts F and the stud *l*, with a wheel felloe and tire, or with the same and one or more socket pieces E, arranged with respect to the felloe, substantially as hereinbefore specified.

No. 51,809.—M. L. DEERING, New York, N. Y.—*Annunciator.*—January 2, 1866.—The bell wires have even length of movement, but are attached at different points on the radial arm which gives motion to the wheel, whose two circular series of studs trip the triggers of the principal and secondary bells, whose combinations of sounds indicate the respective rooms.

Claim.—First, the combination of the ratchet wheel *d*, provided with studs *g*, radial arm *l*, with its spring pawl *m*, connecting with its bell wires *o o*, and hammer stem *s*, for striking the bell *v*, or its equivalent, arranged with regard to each other, and operating when the bell wires are pulled, substantially in the manner described, and for the purpose specified.

Second, in combination with the above, the connecting links *b' b'* of the wires *o o* with the spring-swinging arm *f*, having one or more trips *h l'* for operating the hammer stems *m' n'*, and bell A, or its equivalent, arranged so as to operate when the bell wires *o o* are pulled, substantially in the manner and for the purpose specified.

No. 51,810.—ANTHOINE DE GOGORZA, New York, N. Y.—*Material for the Manufacture of Paper Pulp.*—January 2, 1866.—The claim explains the invention.

Claim.—As a new article of manufacture, a pulp suitable for the manufacture of paper, obtained from the fibre of the bark of the "Pourretia platanifolia" of Humboldt, a tropical tree of the natural order of the "Malvaceae," whether used alone, or in combination with other fibrous substances, in the manufacture of paper, substantially as above described.

No. 51,811.—LEVI S. DEMING, Newington, Conn.—*Farm Gate.*—January 2, 1866.—The gates are vibrated on their hinges by means of bands, which pass around their heel posts and connect with a lever beneath the surface of the ground. The lever is oscillated by a shifting, weighted roller, actuated by hand levers placed within reach of an equestrian approaching in either direction.

Claim.—The combination of the bar *h*, weight *p*, with the brakes A, gates *k*, substantially in the manner as and for the purpose described.

No. 51,812.—AUGUST THEODORE DIETZ, Philadelphia, Penn.—*Tobacco Pipe.*—January 2, 1866; antedated October 19, 1865.—The stem passes transversely across the reservoir beneath the bowl and receives the smoke at an opening on its under side.

Claim.—Extending the stem of the pipe or of the elbow D through and opening its tube downward into the reservoir, as specified and described.

No. 51,813.—JOHN W. DIXON, Philadelphia, Penn.—*Manufacture of Paper Pulp.*—January 2, 1866.—The cut wood or straw is boiled under a pressure of from 125° to 250° Fahrenheit, with a change of water and reboiling if necessary.

Claim.—The process of treating wood, straw, cane, and other analogous vegetable substances by highly heated water under pressure of 125 pounds and upward, substantially as herein set forth and described.

No. 51,814.—LORENZO DOW, New York, N. Y.—*Drill for Rock Boring.*—January 2, 1866; antedated December 28, 1865.—The face of the drill stock is armed with sapphires, whose cutting action extends beyond the periphery of the stock.

Claim.—A ring or stock armed with sapphires, which are disposed in such a manner as to protect the stock while performing its legitimate function of boring or cutting, substantially as herein described.

No. 51,815.—JAMES B. EADS, St. Louis, Mo.—*Method of Converting a Rectilinear Motion into a Rotary Motion.*—January 2, 1866.—The rectilinear motion of the piston is communicated to two nut holders which reciprocate on the slotted shaft to which rotary motion is to be imparted. The threaded nuts engage with the spiral grooves in the shaft; these grooves run in different directions and each is traversed by its respective nut. An arrangement of pawls throws the appropriate nut into engagement.

Claim —The converting of a rectilinear motion into a rotary one by the use of nuts, screw, shaft, and pawls or stops, substantially as described.

No. 51,816.—JOHN EKIN, Xenia, Ohio.—*Coal Stove.*—January 2, 1866.—The fire chamber has a central conical base plate and perpendicular bars, in circular series, surrounded by an inner cylinder. The air is admitted above, and the results of combustion pass outward between the bars and below the edge of the inner cylinder upward to the flue or downward to the ash pan, which is secured to a flange on the base.

Claim.—First, the combination of the inner cylinder, perpendicular grate-bars, and cone plate, substantially as described.

Second, the flange projecting downwardly from the base plate of the stove to form a means of attachment for the ash pan, substantially as described.

No. 51,817.—RICHARD ELLIOT, Plainfield, N. J.—*Combined Plough and Scraper.*—January 2, 1866.—Attached to the plough beam are a share, a scraper, and an oblique grading bar for levelling

Claim.—The scraper composed of the bar E and bottom F applied to or combined with a plough, to operate substantially as and for the purpose set forth.

Also, the bar G, in combination with the plough, substantially as and for the purpose specified.

No. 51,818.—JOSIAH ELLS, Pittsburg, Penn.—*Instrument for Drawing Railroad Spikes.*—January 2, 1866; antedated December 26, 1865.—The fulcrum piece is based upon the tie and hooked over the rail. The claw of the lever lifts the spike by the head.

Claim.—The employment and use of a lever or draw bar having a bifurcated claw of curved form, in connection with a hook, or pair of hooks, for supporting a fulcrum, and so constructed as that the hooks will catch over the rail, and prevent the fulcrum of the lever or bar from slipping away during the operation of drawing the spike.

No. 51,819.—JOHN U. FIESTER, Winchester, Ohio.—*Broom Head.*—January 2, 1866.—The clamping jaws are hinged at the lower ends; spiked bars clasp the brush; the united upper ends of the clamp form a screw for insertion into the socketed handle.

Claim.—The spike bar C, constructed and operating substantially as described, in combination with the clamp A, for the purposes specified.

No. 51,820.—JOSEPH FIRMENICH, Buffalo, N. Y.—*Beer Faucet.*—January 2, 1866.—An injector is fitted into the spigot to force a portion to the bottom of the vessel and cause an ebullition.

Claim.—First, in combination with the spigot of a beer faucet, a central internal tube *c*, closed, with the exception of one or more minute perforations at its lower extremity, and provided with a closely-fitting follower *d*, having a square shank F, and thus serving the double purpose of opening and closing the spigot and of operating the plunger, and so constructed that when the mouth of the spigot is inserted in the beer the raising of the follower will cause the tube to fill by atmospheric pressure, in the manner and for the purpose herein set forth.

No.51,821.—ALEXANDER W. FOSTER, Jr., Pittsburg, Penn.—*Cut-off Valve Gear.*—January 2, 1866.—The valve is tripped by the action of a combination cam, which slips axially on its shaft by the action of the governor. The longitudinal position on its shaft determines which of the cams shall actuate the valve, and the variation in the length of the cams determines the duration of steam-opening.

Claim.—First, the drum B, constructed as herein described, with a series of cams, 1, 2, 3 to 9, 10, of gradually decreasing length, and made to shift on its axis by the action of the governor, to operate in combination with the valve A, substantially as and for the purpose described.

Second, providing the working faces of the cams 1, 2, 3 to 10 with V-shaped grooves, to operate in combination with the V-shaped roller *a* on the valve-spindle, substantially as and for the purpose set forth.

No. 51,822.—WILLARD MUNROE FULLER, Chicago, Ill.—*Apparatus for extracting Gold and Silver from Quartz, &c.*—January 2, 1866.—The powdered quartz or ore is discharged

in a diffused condition under a column of mercury or heated lead, and, rising through the metallic bath, the amalgamation is accomplished.

Claim.—First. the method herein described of introducing, in a diffused condition, powdered auriferous or argentiferous ores under a column of mercury or heated lead, so that the individual particles of gold or silver, on rising through the mass of mercury or lead, shall necessarily come in contact and infallibly form an amalgam or alloy therewith, substantially as set forth.

Second, the method herein described of forcing crushed and powdered auriferous or argentiferous ores down and up and through a body of mercury or melted lead, for the purpose of forming an amalgam or alloy therewith, by atmospheric pressure—that is to say, by exhausting the air in the vessel containing the mercury or melted lead, substantially as herein set forth.

Third, an apparatus or machine for extracting gold or silver from auriferous or argentiferous ores, the same consisting of the following elements in combination: First, a closed amalgamating or alloying vessel, as described; second, a hopper and shoot or tube discharging the ore at the bottom of the said vessel, as described; third, a device or machine for exhausting the air in said vessel, as described.

Fourth, the employment, in combination with the amalgamating or alloying vessel, as described, of an expanding or trumpet-shaped shoot or tube, for conveying the powdered ore to near the bottom of said vessel in a diffused state, substantially as herein set forth.

No. 51,823.—J. M. W. GIEST, Lancaster, Penn.—*System for Libraries.*—January 2, 1866.—The books are arranged in groups suited to the capacity of the respective classes, are labelled with their group and library number, and are catalogued upon the group indexes which are contained in a partitioned box. The library index indicates the systematic distribution.

Claim.—First, the arrangement of Sunday school libraries into uniform divisions, numerically corresponding with the classes of the school, in combination with the figures on the fixed margin of the index and the folios of the catalogue, substantially in the manner and for the purpose specified.

Second, the employment of the index, with its revolving disk, for the designation of classes and divisions, substantially as shown, for the purpose specified.

Third, the arrangement of the catalogue into uniform divisions, (with uniform intervening blanks, consecutively numbered,) corresponding with the divisions of the library and classes in the school; also the application of the catalogue as a teacher's class-book, substantially in the manner specified.

Fourth, the construction and use of the index box and its sliding lid, with its slate surface or equivalent, and designation of classes, as a register, substantially as shown and for the purpose specified.

Fifth, the peculiar method of securing library tags by the use of isinglass and tannic acid, independently applied, in the manner and for the purpose specified.

Sixth, the combination and use of the index, index box and register, catalogue and tags, as a system, arranged and operating substantially as and for the purpose fully set forth and shown in the foregoing specification.

No. 51,824.—LUTHER GIBBS and HIRAM M. SHAW, Fremont, Ohio.—*Farm Gate.*—January 2, 1866.—The gate in opening slides horizontally, and is received between two parallel panels of fence; when closed, its projecting boards rest in mortises of the post.

Claim.—A sliding gate consisting of the bars B, which slide between the boards of the adjoining panel and fit snugly into the intervening spaces, the frame E, with its roller, the brace C, and cords D, all constructed and combined substantially as and for the purposes set forth.

No. 51,825.—CALVIN L. GREEN, Johnson's Creek, N. Y.—*Hand Corn Planter.*—January 2, 1866.—The upper section of the hoe-handle is jointed to the seed-box, and, when released by a trigger, operates the slide in the seed-box.

Claim.—First, the employment or use of the jointed handle C and D in hand corn planters in combination with the delivery slide B.

Second, the adjustable locking clamp E, constructed, arranged, and operating substantially in the manner and for the purpose shown and described.

Third, the combination of the seed-box A with the jointed hoe handle in hand planters, for the purpose set forth.

No. 51,826.—JOHN WILLIS GRIFFITHS, Brooklyn, N. Y.—*Wood Bending Machine.*—January 2, 1866.—The bed-plate is a disk, capable of revolution, to operate in connection with a pressure bar to bend the free end of the timber into the required shape, where it is retained by a joint mould and adjustable holders bolted to the bed-plate. Another mode of operating is by a hydraulic plunger, which forces the timber between rollers attached to the bed-plate.

Claim.—First, the machine for bending timbers herein described, constructed and operating substantially as herein set forth.

Second, the joint mould with adjustable holders, constructed substantially as herein shown and described.

Third, the joint mould with adjustable holders, in combination with the revolving disk and compresser, substantially as described.

Fourth, the combination of the hydraulic press, thrusting head O, and vertical shafts E E, as and for the purposes described.

Fifth, the double head clamp L, in combination with the joint mould and adjustable holders.

No. 51,827.—JOHN WILLIS GRIFFITHS, Brooklyn, N. Y.—*Wood Bending.*—January 2, 1866.—The timber, of rectangular sectional shape, is bevelled by making saw kerfs nearly through; being bent to the form required, the slabs are removed.

Claim.—The method of preparing bevelled ship timber for bending to forms required, by sawing bevelling slabs or boards from the sides of the timber, but not entirely severing the same therefrom, substantially as shown and described.

No. 51,828.—FRANCIS M. HARRIS, Winnemac, Ind.—*Evaporator.*—January 2, 1866.—The pans are inclined forward to increase the relative depth of liquid at the front; the highest and first pan in the series has a scum spout. A part of the fire surface is occupied by a generator which emits steam under the pans.

Claim.—First, the arrangement of the pans upon the furnace in an inclined position, in combination with the scum spout at the forward end, as herein shown and described.

Second, the formation, in pans for concentrating saccharine liquors, of a water chamber for the formation of steam and for conveying the same in the form of jets under the pans, substantially as and for the purpose set forth.

No. 51,829.—C. L. HEYWOOD, Boston, Mass.—*Railway Snow Plough.*—January 2, 1866.—The scraper is self-adjusting laterally, to adapt itself to the deflections of the track; is held to its work by a pressure lever and raised to clear frogs, &c., by a hand lever. Side wings to displace snow are hinged to the truck, and are adjustable by rack and pinion.

Claim.—First, the use of a scraper fitting over the rails, and susceptible of both a vertical and lateral play, by means of devices arranged and operating substantially as hereinabove described.

Second, operating the wings *x x*, by means of the arrangement of devices described, so that they can be set and held at any desired angle with the carriage, as set forth.

Third, the combination of the hand lever *u u*, cam *v v*, and lever arm *l l*, for elevating and disengaging the scraper from the rails, as described.

Fourth, hanging the scraper so as to incline towards the wheels, and attached to an arm *k k*, which has an elastic bearing. as described and for the purpose specified.

No. 51,830.—JAMES B. HODGSKIN, New York, N. Y.—*Manufacture of Floor Cloths.*—January 2, 1866.—Thick paper is suitably ornamented, and prepared by the water-proof varnish described in J. B. Hodgskin's patent of June 30, 1863.

Claim.—As a new article of manufacture, the paper described, when prepared as herein-before set forth.

No. 51,831.—CORNELIUS HOOD, Senaca Falls, N. Y.—*Adjustable Packing for Pumps.*—January 2, 1866.—The packing around the plunger is expanded to the required extent by a gauge adjustable on the pump rod.

Claim.—First, the adjustable gauge E C, substantially as constructed and applied.

Second, a set screw or equivalent detainer, in combination therewith.

No. 51,832.—GEORGE F. HOPPER, New York, N. Y.—*Manufacture of Floor Cloth.*—January 2, 1866.—Explained by the claim.

Claim.—The manufacture of floor cloth or paper, by successively saturating the printed paper with oil, covering it on both sides with a solution of India-rubber and varnishing the face side, substantially as described.

Also, the floor cloth or paper manufactured as above described as a new article of manufacture.

No. 51,833.—SAMUEL D. HOVEY, Chicago, Ill.—*Artificial Fuel.*—January 2, 1866.—One ton of coal-dust; 200 pounds coal-tar pitch, or petroleum residuum; 100 pounds pine pitch, or rosin; mix and press into cakes.

Claim.—A new combination of an artificial fuel, as herein described.

No. 51,834.—WILLIAM HUDSON, Jr., and AUGUSTUS L. HUDSON, Hingham, Mass.—*Photographic Sensitizing Box.*—January 2, 1866.—The object is to avoid handling the plate during the sensitizing and until it is removed from the plate holder after the picture is taken.

Claim.—First, the within described method of sensitizing a plate by placing the same on dippers, immersing it in the sensitizing solution, and securing it in the shield—all these operations being effected by mechanism substantially such as herein specified, or any equivalent thereof.

Second, the dippers F, applied to a rocking head E, in combination with the intermit-

tingly oscillating sleeve B, cam groove *h*, and shield N, all constructed and operating substantially as and for the purpose described.

Third, the oscillating lever M and latch *s*, in combination with oscillating arms D, toothed rack *q*, pinion *p*, and hinged cover L, constructed and operating substantially as and for the purpose set forth.

Fourth, providing the cistern with a self-operating cover, substantially as and for the purpose specified.

Fifth, raising the cistern containing the sensitizing liquid against the plate to be sensitized, instead of dipping the plate into the liquid, by means substantially such as herein described, or any equivalent means.

Sixth, the spring pad *k* applied in combination with the dippers F and shield N, substantially as and for the purpose described.

Seventh, the spring catches b^2 in the shield, in combination with buttons i^2, constructed and operating substantially as and for the purpose described.

Eighth, the levers l^2 m^2 o^2 p^2 and connecting rod q^2, applied in combination with the spring catches b^2 in the shield, substantially as and for the purpose set forth.

Ninth, the spring dog s^2, in combination with the notch r^2, in the rod q^2, and with levers o^2 p^3 l^2 m^2, and spring catches b^2 in the shield, all constructed and operating substantially as and for the purpose described.

Tenth, the set screw t^2 in the spring dog s^2, applied in combination with the handle C, as described, so that the moment when the spring catches b^2 are sprung can be regulated.

No. 51,835.—Ferdinand Imhorst, New York, N. Y.—*Lamp Chimney Cleaner.*—January 2, 1866.—This cleaner has two hinged jaws: a long, straight one with a fixed brush and a shorter one with a pivoted flexible brush; the latter adjusts itself to the interior of the bulb as the jaws are expanded by compression of the handle.

Claim.—The yielding self-adjusting pad *d*, in combination with the short jaw *b*, of the cleaner A, constructed and operating substantially as and for the purpose set forth.

Also, a lamp chimney cleaner, made as described, as a new article of manufacture.

No. 51,836.—Benjamin F. Joslyn, Stonington, Conn.—*Revolving Fire-arm.*—January 2, 1866; antedated December 26, 1865.—The disengagement of the spring block permits the barrel to be turned laterally; a groove in the barrel traversing on a projection of the centre pin as the barrel is moved forward to allow the introduction of the cartridges into their chambers.

Claim.—First, connecting the frame and barrel of a revolver together by means of a centre pin B secured to the frame, and having one or more projections *a*, adapted to a groove *b* and to one or more inclined recesses *c* of the barrel, all substantially as and for the purpose herein set forth.

Second, the combination of the barrel, its spring block G and pin *h*, with the projection *f* of the frame, and its recess *i*.

No. 51,837.—Benjamin F. Joslyn, Stonington, Conn.—*Breech-loading Fire-arm.*—January 2, 1866.—The tubular forward prolongation of the breech piece forms a sleeve in which the barrel rotates and moves forward to expose its rear for the insertion of the cartridge. A spring catch ejects the spent capsule by engagement with its flange during the forward motion of the barrel.

Claim.—First, the combination of the breech piece D and its tubular projection *d*, with a cylindrical barrel capable of sliding and being turned in the said projection, all substantially as and for the purpose herein set forth.

Second, the combination of the said cylindrical barrel, tubular projection *d* of the breech piece, and spring catch G, the whole being arranged and operating subtantially as set forth.

No. 51,838.—John C. Kellogg, Thorntown, Ill.—*Gate Fastening.*—January 2, 1866.—The latch which engages with the notch in the post is attached to a gravitating guide piece in the stile of the gate.

Claim.—The gate fastening herein described, when constructed, arranged, and operated substantially as set forth.

No. 51,839.—Francis L. King, Worcester, Mass.—*Egg Beater.*—January 2, 1866.—Loops of flattened steel wire are united at their ends in a handle.

Claim.—The application and use of the flattened and sharp-edged elastic steel wire, for the purpose of beating up eggs or cutting up eggs, as specified.

No. 51,840.—Daniel Lampson, Beaver Dam, Wis.—*Washing Machine.*—January 2, 1866.—The corrugated bed-piece is formed of projecting slats and interposed spacing blocks, the latter covering the heads of the nails by which both are secured in place.

Claim.—Applying the interposed spacing blocks *b b* to the slats *a a* in such manner as to form covers for the heads of the nails which are employed for securing said blocks and slats in place, substantially as described.

No. 51,841.—CHARLES B. LOVELESS, Syracuse, N. Y.—*Apparatus for Carburetting Air.*—January 2, 1866.—The air-holder descends in the tank and forces the air through a succession of oil chambers beneath to the gas chamber. A supplementary gas-holder furnishes pressure while the larger air-holder is being refilled.

Claim.—First, the small or supplemental gasometers in combination with the tank A and air-holder B, when operating substantially as and for the purposes described.

Second, the separate or combined construction and arrangement of the chambers C D and F, substantially as described.

Third, conducting the air, as it becomes gas, through pipes Q J *d d'* and *e* into the gas chamber.

Fourth, the arrangement, substantially as described, of the stop-cocks *f g* and *h*.

Fifth, the stove K, as described in combination with the air-mixing chamber M and pot-stands L.

No. 51,842.—THOMAS LOWRY, Pittsburg, Penn.—*Apparatus for Drawing Pipes from Wells.*—January 2, 1866.—Pawls or wedges on the end of a draw rod are lowered into the well tube and expanded against its sides for the purpose of withdrawing it.

Claim.—The employment and use of expanding wedges or pawls, or their mechanical equivalents, operated by a draw rod in the manner described, for the purposes of drawing pipes from oil wells, as hereinbefore stated.

No. 51,843.—ORAZIO LUGO, New York, N. Y.—*Distilling Petroleum and other Substances.*—January 2, 1866.—Aeriform fluid is forced through the still to facilitate the evolution of the vapor.

Claim.—The improvement in distillation above described and for the purposes specified.

No. 51,844.—WILLIAM W. LYMAN, West Meriden, Conn.—*Stopper for Fruit Jars.*—January 2, 1866.—The glass stopper has a groove to receive the packing ring, and depressions in its sides to assist in grasping it for removal.

Claim.—Glass stopper A for fruit jars, constructed with a thumb piece *c*, notches *d*, recess *a*, ring *b*, depress top and flat bottom, as described.

No. 51,845.—JOHN MACMULLEN, New York, N.Y.—*Pencil Sharpener.*—January 2, 1866.—A knife on the edge of the box and a file on a post in its centre afford the means for sharpening pencils, the refuse being collected in the box.

Claim.—First, the isolation as well as the convenient form and arrangement of the file and its combination with the dirt box, as in No. 1.

Second, the combination of the knife blade or cutter with the chip box, as in figure No. 2, so that the sharpening of pencils or crayons may not cause any dirt on the table or other place where it may be used.

Third, the combination of the dirt box with both the file and the cutter, as in figure No. 3, for very often a different angle is required for the wood from that required for the marking material, and this combination secures both of these, together with the advantages of the dirt box.

Fourth, the modification of making the boxes somewhat higher at the ends, so that books or papers may be laid upon the pencil sharpener without receiving any soil from the filings that may remain upon the file.

No. 51,846.—JAMES MALCOLM, New York, N. Y.—*Colored India-rubber and Gutta-percha Compounds.*—January 2, 1866.—Sulphuret of zinc, preferably that obtained by fusion, is used as a pigment in the process of coloring the compound.

Claim.—First, combining with India-rubber, or other vulcanizable gum and sulphur, a pigment prepared in the manner herein described; and this combination is claimed whether the said compound or sulphur, gum and pigment be or be not mixed with the other ingredients, as set forth.

Second, the method of producing colored vulcanized India-rubber, or such other gum, by combining with the gum sulphur, and a pigment prepared as described, and by subjecting such compound to vulcanizing heat, as set forth.

Third, the method of producing colored vulcanized India-rubber, or such other gum, by combining with the gum sulphur, and a pigment prepared as described, and by subjecting such compound to vulcanizing heat and by exposing the vulcanized compound to solar rays, whether immersed or not in alcohol.

No. 51,847.—JAMES MALCOLM, New York, N. Y.—*Manufacture of colored India-rubber and Gutta-percha Compounds.*—January 2, 1866.—The surface of the vulcanized compound is exposed to the solar rays in alcohol, rinsed in water and dipped in dye.

Claim.—The method herein described of coloring or dyeing vulcanized India-rubber or other vulcanized gum.

No. 51,848.—James Malcolm, New York, N. Y.—*Manufacture of colored India-rubber and Gutta-percha Compounds.*—January 2, 1866.—The surface of the vulcanized compound is exposed to the solar rays in alcohol, rinsed in water and dipped in dye.

Claim.—Vulcanized India-rubber, or other vulcanized gum, colored or dyed, substantially as herein set forth.

No. 51,849.—James Malcolm, New York, N. Y.—*Manufacture of colored India-rubber and Gutta-percha Compounds.*—January 2, 1866.—Sulphuret of zinc, preferably that obtained by fusion, is used as a pigment in the process of coloring the vulcanized compound.

Claim.—First, the plastic compound herein described, the same consisting of India-rubber or other vulcanizable gum, sulphur, and a pigment prepared as herein set forth, and this is claimed whether the said composition contains other ingredients or not.

Second, as a new manufacture, colored vulcanized gum when composed of India-rubber or other vulcanizable gums, sulphur, and a pigment such as herein described, and when incorporated, subjected to vulcanizing heat, and this is claimed whether the said compound contains other ingredients or not.

No. 51,850.—Charles Medbury and Thomas Wyatt, Providence, R. I.—*Railroad Plough.*—January 2, 1866.—The plough is attached to the car bed by devices which preserve its absolute vertical height as the car descends when loaded. The share is suspended from a compound lever under the bed, and a spring permits it to yield to obstructions or holds it up when out of use.

Claim.—First, mounting the plough in such a manner that it will adapt itself, in respect to its position and elevation, to the loaded state of the car.

Second, the combination and arrangement of the spring with the plough, to operate substantially as described for the purposes specified.

Third, controlling the operation of the plough by means of a crank shaft and suitable connections, substantially as described.

No. 51,851.—William Melville, Detroit, Mich.—*Sawing Machine.*—January 2, 1866.—The saw is hung within a supporting frame, and has a counterbalance weight, which assists the effective stroke.

Claim.—The arrangement of the stationary frame *a*, swinging frame *d' d'*, saws *c c*, arms or links *l l*, frame *o*, bar *p*, weight *t*, and supports *d d*, as and for the purpose set forth.

No. 51,852.—George W. Mitchell, St. Louis, Mo.—*Lamp.*—January 2, 1866.—Explained by the claim.

Claim.—First, a lamp in which the oil is conveyed directly from the lamp reservoir to the flame without the employment of a wick.

Second, regulating the flow of oil to the lamp burner by a device located within the reservoir, substantially as described, so as to prevent leakage.

Third, the diminishing groove *e'* in the plug E, in combination with the aperture *a*, for regulating the flow of oil to the conducting tube F.

Fourth, the burner herein described, the same consisting of the external cup G and internal deflector G', so arranged as to leave an intervening space *g*, as and for the objects specified.

Fifth, the combination with the burner G G' of the perforated tubes H H', arranged and employed substantially in the manner and for the purpose set forth.

Sixth, making the reservoir A with a reflecting surface A^2, substantially as described.

No. 51,853.—George Mosman, Chicopee, Mass.—*Carpet Stretcher.*—January 2, 1866.—The carpet is held by the serrated edge of the plate, and the tack is sustained in an erect position by jaws which open to release it when the stretcher is withdrawn after the driving of the tack.

Claim.—The holders *c*, springs *a*, or their equivalents, in combination with the plate *k*, substantially as and for the purposes described.

No. 51,854.—William S. Nelson, St. Louis, Mo.—*Draining Pump.*—January 2, 1866.—The rotating shaft has flanges radial at the induction end and becoming spiral at the delivery, where radial plates arrest the rotary whirl of the water. A ring around the spiral portion protects the flanges.

Claim.—First, surrounding the vanes F with a ring E, which connects their ends, and which ring is interposed between them and the side of the cylinder of the pump, substantially as and for the purpose above described.

Second, the combination upon the same hub or hollow cylinder C of the spiral vanes F and the straight vanes B, in manner substantially as described.

Third, reducing the part A' of the outer cylinder in which the straight vanes revolve, so that its sides become narrower as they approach the end of the cylinder, substantially as shown.

Fourth, in combination, the fixed outer cylinder A with its reduced end A', the vanes B and F, arranged so as to be continuations of each other and the fixed radial blades H, substantially as shown.

No. 51,855.—F. R. Osgood, Roxbury, Mass.—*Extension Table.*—January 2, 1866.—The auxiliary hinged leaves when folded together pack between the main frame and the table top. The supporting hinged sections fold in transverse order, and are received in pockets in the frame.

Claim.—In extension tables having auxiliary leaves, making or hinging said leaves so as to fold together under a leaf or leaves, hinged to the frame of the table when it is closed up, substantially as described.

Also, the employment of the connecting and supporting hinges *g*, having surfaces for the support of the auxiliary leaves at a distance above the main frame equal to the thickness of the folded or auxiliary leaves.

Also, the pockets *h*, made in the centre frames *b* for receiving the hinges *g*, substantially as set forth.

No. 51,856.—Henry H. Palmer, Rockford, Ill.—*Bed Bottom.*—January 2, 1866; antedated December 28, 1865.—The longitudinal slats are connected at the mid-length of the bedstead to a common transverse rod, which forms the pintle when the bed bottom is doubled together. Flexible braces and sustaining springs unite the spring upper portion with the rigid lower frame.

Claim.—First, the upper frame-work of slats, composed of two sets of slats connected together at the centre, or at their inner ends, or at any point between their centre and either end, by means of a hinge or joint, substantially as set forth.

Second, the compound joint, composed partly of metallic and partly of flexible material, substantially as described.

Third, the flexible braces D E, with the flexible straps *b*, in connection with the slotted frames and the rigid lower frames A A′, with the straps *c* attached to the former for the purpose specified.

Fourth, the combination of the upper slatted frames with the lower rigid ones and the springs attached to both, all constructed and arranged substantially as set forth.

No. 51,857.—J. Palmer, Cleveland, Ohio.—*Manufacture of Sand Paper.*—January 2, 1866.—The sand paper is toughened by the application of boiled linseed oil or its equivalent.

Claim.—Sand, flint, or emery paper saturated with boiled linseed oil, or other quick drying fatty substance, as a new article of manufacture.

No. 51,858.—George G. Percival, M. D., Brooklyn, N. Y.—*Hydro-Pneumatic Telegraph for Hotel Annunciators.*—January 2, 1866.—Each room is provided with an indexed gauge, connected by an air pipe to a corresponding gauge in the central office. The injection of air by the guest raises the liquids in the respective gauges uniformly, indicating as per marginal indices the requirement of the party.

Claim.—A hotel annunciator for indicating the wants of occupants, consisting of pressure gauges, located respectively in the office, or at the proper point of observation for the responding party, and in the room or rooms of the person or persons who are to make known their wishes, and communicating with each other by a suitable tube or tubes, together with the reservoir I for containing a suitable liquid, the tubes H K and L, and mouth-piece E, which are located in the room from which communications are to be transmitted, and which operate in connection with corresponding parts located in the office, substantially in the manner and for the purposes herein set forth.

No. 51,859.—William M. Perkins, Lafontaine, Ind.—*Ditching Machine.*—January 2, 1866.—A double coulter cuts the sides of the ditch. The share raises the soil, which is deflected laterally by the mould-board, and pushed away from the ditch by the wings of the truck following.

Claim.—First, the combination of the double coulter, consisting of the cutters H H′, with the screw and nut I K.

Second, the adjustable mould-board M, adapted to act upon the raised mould at different depths of the share, as described.

Third, the truck O O P R R in combination with and drawn behind the plough, and operating as and for the purpose described.

No. 51,860.—Thomas Perrins, Philadelphia, Penn.—*Kite.*—January 2, 1866.—The frame which distends the cover is capable of partial dissection to reduce the area of the kite for transportation.

Claim.—A kite, the frame of which is formed in two or more pieces, constructed, combined, and arranged with respect to each other and the cover of the kite, substantially as described and for the purpose set forth.

No. 51,861.—J. C. Plumer, Boston, Mass.—*Carriage Jack.*—January 2, 1866.—As the lever is depressed, its fulcrum slides in an oblique slot and throws the toggle into line, actuating the elevating block.

Claim.—The use of the toggle in conjunction with a lever with sliding fulcrum, for the purpose specified.

No. 51,862.—JOSEPH F. POND, Cleveland, Ohio.—*Clothes Wringer.*—January 2, 1866.—The India-rubber cylinder is lined inside and out with canvas. The motion of the projection on the cam lever changes the fulcrum of the spring lever and adjusts the upward pressure of the lower roller.

Claim.—First, the application of canvas cloth, or other material, for lining, covering, and protecting the inner surface of India-rubber clothes wringer rollers, and to serve as a fastening to secure the rolls to the shaft, substantially as herein described.

Second, the cam lever D, with its bearing *i*, operating in the slot K of the spring lever C, for the purposes herein set forth.

No. 51,863.—BENJAMIN F. PORTER and H. M. GLINES, Manchester, N. H.—*Table Stand for Articles of Food.*—January 2, 1866.—This portable cage for pies, &c., has shelves, and doors with wire gauze panels.

Claim.—The table-stand, provided with a series of shelves, and either with or without an open wire netting or casing, substantially as described, and for the reception of articles of diet, as specified.

No. 51,864.—J. H. R. REFFELT, Hoboken, N. J.—*Alphabeticon.*—January 2, 1866.—In concentric circular series on a rotating disk are arranged consonants, vowels, &c., which are seen through apertures in the face-board as the appropriate slides are withdrawn. Additional letters may be associated with each on the face board to instruct in combinations of letters.

Claim.—The combination of the single disk C, having characters on both sides, and made for two languages, the lettered slides *b* and perforated boards B, all constructed and arranged to operate as and for the purposes specified.

No. 51,865.—JACOB C. ROBIE, Binghamton, N. Y.—*Apparatus for Filling Moulds for Hard Rubber.*—January 2, 1866.—The hard rubber is pressed into the mould after the flask is closed and placed in the heater. The rubber is ejected by a piston from the heated cylinder, which is connected to the flask.

Claim.—First, the peculiar construction of the cylinder, Fig. 4, with the screw plug or plunger, Fig. 3, and the mode of attaching the cylinder to the flask, Fig. 2, as herein described for the purpose set forth.

Second, the openings through the cover and top of the flask, for the purpose herein described.

Third, the slide stopper, Fig. 5, letter S.

Fourth, retaining the material to be vulcanized in a condensed state during the process of vulcanization, for the purpose set forth.

Fifth, the combination of the cylinder, Fig. 4, screw plug, Fig. 3, wrenches R and E, Fig. 1, flask with vent openings D D C in its cover, and slide stopper S, constructed substantially as herein described for the purpose set forth.

No. 51,866.—WILLIAM W. ROBINSON, Ripon, Wis.—*Bed Bottom.*—January 2, 1866.—The spring slat rests by its ends upon grooved plates attached to the bedstead rails, and is braced by a tension rod, whose ends draw upon rubber springs in boxes beneath the slat.

Claim.—First, the construction, arrangement, and combination of the two-part spring cases or boxes and springs C C′, with the spring slat B, and tie rod or brace E of the spring bed bottom, substantially as and for the purposes set forth.

Second, the rubber spring C in combination with the two-part case or box A D, constructed and operating as described, the same being an attachment for a braced spring slat of a spring bed bottom, as set forth.

Third, the screw plates F, with a grooved portion *c*, in combination with the spring slat B, the part boxes A D, springs C C′, substantially as and for the purposes set forth.

No. 51,867.—HENRY SCHNEIDER, Cleveland, Ohio.—*Cement for Stone.*—January 2, 1866.—This cement for metal, stone, or wood work is composed of three parts calcined sulphate of lime and two parts iron filings, and chips of cast-iron, brought to the consistence of putty by equal parts of beer, glue water, and white of egg.

Claim.—The cement, herein set forth, when compounded and composed of the ingredients described.

No. 51,868.—AUGUSTE SCHUSTER, St. Louis, Mo.—*Remedy for Sore Eyes.*—January 2, 1866.—Compounded of sulphate of zinc, half an ounce; powdered sugar, half an ounce; spiritus formicarum, half an ounce; put in a quarter-pint bottle, and fill up with distilled rose water; ferment and filter.

Claim.—A remedy for sore eyes, or inflamed eyes, composed of the ingredients herein mentioned, as and in the proportions specified, or their chemical equivalents.

No. 51,869.—HENRY SEEVERS, Perry township, Ohio.—*Sheep Rack.*—January 2, 1866.—The rack slips into the box and rests upon the hay; the grain trough, hinged by arms to the frame, can rest in feeding position upon the rack, or be elevated while filling the box with hay.

Claim.—The sliding rack and the grain trough, so hinged and arranged as to allow the sheep to feed upon either grain or hay, and stand upon the same ground without having trough or rack at any time to interfere with each other, and so easily moved to one side when the box is to be filled with hay.

No. 51,870.—THOMAS SHARP, Nashville, Tenn.—*Apparatus for Tanning.*—January 2, 1866.—The hides are suspended in a box whose top and bottom are provided with valves opening upward; the box is oscillated upon a horizontal axis in a tank of tanning liquor, and the motion causes a constant upward flow of the liquor, whose gravity is ascertained by an indicator attached.

Claim.—First, the use, in a reservoir or vessel containing the tanning liquor employed, either one or more false vats or chambers, provided with one or more valves in the lower and upper portions thereof, and so arranged or hung within the reservoir as to be susceptible of an oscillating motion in a vertical plane, substantially in the manner described and for the purpose specified.

Second, in the graduated index *s*, arranged as and for the purpose specified.

No. 51,871.—THOMAS M. SHEPPARD, Chicago, Ill.—*Sieve.*—January 2, 1866.—A roller and an inclined metallic scraper are attached to a vertical revolving shaft, and traverse the wire bottom of the cylindrical sieve.

Claim.—In combination with a sieve A B the employment of the roller G, the scraper H, shaft E, and crank F, all arranged and operating as and for the purposes herein specified and shown.

No. 51,872.—ELIAS SHOPBELL, Ashland, Ohio.—*Machine for Upsetting Wagon Tires.*—January 2, 1866.—The heated tire is clamped at two places between serrated cams and blocks; one block is made to slide toward the other, upsetting the tire. A punch is attached to the machine for convenience.

Claim.—First, the construction and arrangement of the herein-described serrated cam levers E′ F′, serrated cogged and concave slide D, serrated stationary block B, and the cogged segmental lever H′, when combined and susceptible of operation, substantially as described

Second, in combination with the above the arrangement of the punch die L and standard L′, for the purpose set forth.

No. 51,873.—F. SHURR and JOHN PALMER, Milwaukee, Wis.—*Churn.*—January 2, 1866.—The cylindrical churn stands on a perforated base and has an open standard tube within, with a valve opening upward; the dasher is a tube closed above; its upward motion fills it with air from the central tube; the air on the downward motion is expelled between the tubes and into the cream.

Claim.—First, the air duct or tube C, arranged within the churn and opening at the bottom thereof, substantially as described.

Second, the valve *a* arranged upon the air duct C and within the hollow dasher rod E, substantially as described.

Third, the combination of the churn A, air duct or tube C, dasher D, hollow dasher rod E, and valve *a*, arranged substantially as herein shown and described.

No. 51,874.—AARON W. SMITH, Manchester, N. H.—*Bit Stock.*—January 2, 1866; antedated December 26, 1865.—The bow is divisible transversely, to put on the metallic tubular hand piece; a steel thimble, with bearing surface, is socketed upon the spindle in the head.

Claim.—First, the construction of the bow of a bit stock, substantially as described, so as to allow of its being taken apart for the purpose of adding thereto a revolving hand piece.

Second, the steel plug S and its corresponding steel thimble O′, constructed substantially as described, for the purpose of giving durability and steadiness to the revolution of head C.

No. 51,875.—H. C. SMITH, Ridge Farm, Ill.—*Gang Plough.*—January 2, 1866; antedated December 28, 1865.—The plough beams and head block are pivoted by bolt and strap to the axle, relieving the fore carriage of side draught and the tongue of downward pressure. The frame is pivoted in front to the plough beam, and supported at the rear by a caster wheel; the plough beams are vertically adjustable in the frame.

Claim.—First, the connecting of the plough beams A A to the axle C by means of the king bolt D, strap E, and plates F F′, all constructed, combined, and arranged in the manner and for the purpose herein set forth.

Second, the plough-beams A A attached to the axle C as shown, in combination with the frame H, the latter being connected at its front end to the plough beams by the rod *b*, and its rear end supported by the caster wheel I; the above parts being used in connection with the cord or chain *c*, pulley *f*, lever J, and the strap K, or its equivalent, for the purpose specified.

No. 51,876.—W. H. SMITH, New York, N. Y.—*Petroleum Burner for Cooking Purposes.*—January 2, 1866.—The oil is vaporized in an annular chamber surrounding the flame; the

vapor ascends a central lower tube, is there mixed with air, and unitedly they issue at a deflector opening, where combustion ensues.

Claim.—First, the flame chamber or vapor generator C, surrounded by the annular oil chamber D, which passes quite around the flame. This form is preferable, but it may pass around only one half thereof.

Second, the tubes F and G, or their equivalents, one within the other, with an air space between them, and with their foraminous lower ends for the admission of air, with the deflector H on the top of the tube F, and the deflector I on the top of the flame chamber C, substantially as and for the purpose set forth.

Third, the flame chamber C, in combination with the oil chamber and deflectors aforesaid, for the purposes described.

Fourth, the burner in all its parts, constructed and arranged as represented and described, for the uses and purposes herein set forth.

No. 51,877.—JASPER SNYDER, Burlington, Iowa.—*Printers' Galley.*—January 2, 1866.—The side of the column of type is regulated by an adjustable block, secured by guide bars and set screws; an adjustable tail piece clamps the foot of the column.

Claim.—The movable sliding block, composed of guide bars *c*, set screw *e*, slotted stick *d*, and adjustable tail piece *f*, in combination with a galley A, constructed and operating substantially as and for the purpose set forth.

No. 51,878.—LEONARD A. SPRAGUE, New York, N. Y.—*Shoe Lacing.*—January 2, 1866.—Loops clamped to the edges of the leather afford eyelets for the interlacing cord.

Claim.—First, the lacing eyelet, constructed substantially as herein described, combining in one continuous piece, and without the employment of solder, the loop or eyelet proper, the washer, and clinching rivet or pin, all as hereinbefore set forth.

Second, the method of fastening the lacing eyelet, as herein described, on to the material to be laced, by piercing the said material and clinching it at one operation, as set forth.

No. 51,879.—NELSON STAFFORD, Brooklyn, N. Y.—*Thief and Test for Liquids.*—January 2, 1866.—This instrument, technically a "velinche," has a thermometer and a hydrometer to test the temperature and gravity of its contents.

Claim.—First, a "thief" tube, formed with an opening, as set forth, in combination with a hydrometer or gauge, as and for the purposes set forth.

Second, the combination of a thermometer, a hydrometer or gauge, and a "thief" tube, substantially as set forth.

Third, the combination of a thief tube, test glass, thermometer, and hydrometer, substantially as set forth.

No. 51,880.—R. T. SUTTON, Rochester, N. Y.—*Grain Dryer.*—January 2, 1866.—The upright cylindrical chamber has a series of circular perforated floors, with alternate central and marginal discharge apertures. Rotary conveyers, alternately centrifugal and centripetal, convey to the apertures the grain which falls from floor to floor.

Claim.—The said conveyers and metallic floors, in combination with the fan F, valves *c* and *v*, and the ventilators *a*, as and for the purposes set forth.

No. 51,881.—HOWARD TILDEN, Boston, Mass.—*Flour Sifter.*—January 2, 1866.—The concave wire bottom of the sieve is traversed by circumferentially grooved rollers and inclined scrapers attached to a horizontal revolving shaft.

Claim.—First, grooving the rollers roundways, so that coarse pieces of foreign matter will slip into the grooves without being crushed between the rollers and the screen.

Second, the rollers grooved roundways, in combination with the inclined scrapers.

No. 51,882.—ASA M. TOMB, Lyons, N. Y.—*Bed Bottom.*—January 2, 1866.—Metallic caps connect the slats with the rubber springs, which are hooked to the bedstead rails.

Claim.—First, the metallic caps B on the end of the slat C, with the aperture or opening *a* in the end of the caps to receive the rubber A, substantially in the manner described.

Second, the hooked headed screws E E, with the holes *b* in the heads thereof, and the wire or iron staples D, as used in connection with the same, substantially in the manner as herein described.

No. 51,883.—MORRIS WELLS, Brooklyn, N. Y.—*Dies for the Manufacture of Sheet Metal Ware.*—January 2, 1866.—Explained by the claim.

Claim.—The process hereinbefore described of forming seamless hollow ware by striking up the article in a series of dies of successively increasng depth and decreasing diameter, in he manner specified.

No. 51,884.—MILTON D. WHIPPLE, Cambridge, Mass.—*Machine for Fulling and Finishing Felted Cloth.*—January 2, 1866.—The felted cloth is held slack between two pairs of fluted rollers while a beater operates upon it. The variation in the velocity of the respective

pairs of rollers is equal to the contraction of the cloth, which is damped and dried at the commencement and close, respectively, of the operation.

Claim.—The mode of fulling or contracting felted cloth by raising, depressing, or bending the fabric while it is held in a slack or loose condition—this effect being produced by means of fluted rollers and a beater, or their equivalents.

Also, a series of pairs of rollers in which the surface velocity of each pair that receives the cloth is less than that of the pair which delivers it, substantially as specified.

Also, in combination with two or more pairs of rollers and a beater, arranged as herein described, the attached wash-box and the drying apparatus, substantially as herein described and for the purpose specified.

No. 51,885.—GEORGE B. WHITING, Washington, D. C.—*Steam Engine.*—January 2, 1866.—The steam cylinder has a fixed, central, cylindrical trunk for a steam chest, and the annular piston reciprocates thereon; steam and vacuum chambers are in the cylinder heads; ports with balanced valves lead from the trunk to the annular working space of the cylinder.

Claim.—First, arranging the induction and eduction valve of a reciprocating steam engine, so as to work within and through the piston, substantially as described.

Second, the fixed central cylinder trunk A, with steam ports and passages, as described.

Third, in combination with the fixed central cylinder trunk A, the piston valve C, steam chamber E, vacuum chamber F, and annular piston K K, substantially as described.

No. 51,886.—GEORGE B. WHITING, Washington, D. C.—*Valve Gear.*—January 2, 1866.—The cut-off and reversing motions are obtained by an adjustable eccentric. A gear wheel on the crank shaft engages a similar wheel on a rotating cylinder, which encloses a system of gear wheels, disks, and wrist pin; the latter adjustable by the engineer to work full steam, cut-off, or reverse.

Claim.—First, the intermediate twin gears *l l' m m' n n' o o'*, either one or more of them, in combination with the pinions *p q*, internal gears *j k*, and disk *g*, substantially as described.

Second, the wrist pin *d*, or its equivalent, and yoke E, in combination with the disk *g*, intermediate twin gears *l l' m m' n n' o o'*, either one or more of them, internal gears *j k*, and pinions *p q*, substantially as described.

No. 51,887.—BENJAMIN WILBUR, Scituate, R. I.—*Bobbin for Spinning, &c.*—January 2, 1866.—Spring prongs project inwardly from the metallic tube which is inserted in the bobbin head; the prongs press against the spindle and secure the bobbin in position.

Claim.—The use of metallic springs, as constructed and inserted and secured in the bobbin head, as above shown and described.

No. 51,888.—DAVID F. WILLIAMS, Cumberland, R. I.—*Clothes Wringer.*—January 2, 1866.—By the devices set forth in the claim the rollers are allowed to separate without throwing the cog-wheels out of gear; blocks on the cross-bar fit the circumference of the tub to which the wringer is clamped.

Claim.—First, the arrangement and combination of the cross-bar G and blocks thereon, with the screws H, slots F, and false standards B, constructed and operated substantially as described.

Second, the cog-wheels I, K, and L, the crank *m* and arm *n*, constructed and operated substantially as set forth.

No. 51,889.—JOSEPH ZENTMAYER, Philadelphia, Penn.—*Combination of Lenses for Photographic Purposes.*—January 2, 1866.—The instrument includes a wide angle of vision with an image without marginal curvature. The lenses are used in various combinations, depending on their relative focal lengths, in connection with the stop plate, which rotates on its mounting as a common centre for all, having its openings made in a proportionate series of areas.

Claim.—First, a doublet made of uncorrected meniscus lenses of different spherical curvatures, arranged concentrically, or nearly so, substantially in the manner and for the purpose specified.

Second, the arrangement of a series of uncorrected meniscus lenses of different spherical exteriors, any two of which series, when set concentrically, form a corrected or nearly corrected doublet, substantially in the manner as specified.

No. 51,890.—E. E. BEAN, Abington, Mass., assignor to himself and JACOB CHICKERING.—*Sewing Machine.*—January 2, 1866.—The needle is guided and sustained by a lateral supporting bar which traverses with the needle. It is especially intended to strengthen the needle in needle-feed machines.

Claim.—First, in sewing machines in which the feed is effected by an eye-pointed needle, a support or brace for the needle, which slides vertically, and whose lateral movement coincides with that of the needle, substantially as described.

Second, the bar D, sliding in and vibrating with the needle-bar, and employed in combination with the hanging bar *e*, or its equivalent, and eye-pointed needle, in the manner and for the purpose explained.

No. 51,891—Thomas A. Campbell, New York, N. Y., assignor to himself and C. L. Goddard, same place.—*Machinery for Oiling Wool, &c.*—January 2, 1866.—This machine throws a spray of oil upon the wool as it leaves the picker. The oil from a reservoir is admitted to a case within which rotates a brush, the contact of whose bristles with the edge of the opening sprinkles the oil upon the wool traversing beneath.

Claim.—The case A and tube G arranged as herein shown, to convey a gradual supply of oil to the rotary brush E without the aid of rollers, and to prevent the scattering and waste of the oil.

Second, making the case A adjustable on the bearers B, substantially as and for the purpose described.

No. 51,892.—J. E. Carver, Bridgewater, Mass., assignor to himself, Charles Jordan, East Bridgewater, and John Pierce, Boston, Mass.—*Cotton Gin.*—January 2, 1866.—The cotton passes between feeding rollers into a case, where it is subjected to the action of a winged drum. The feeding rollers are respectively a spirally-grooved metal roller and a smooth wooden one.

Claim.—The combined beater and fan, composed of the drum B provided with wings *c*, in combination with the spirally-grooved roller C, smooth roller D, and the case A, substantially as and for the purpose herein set forth.

No. 51,893.—Daniel E. Eaton, Boston, Mass., assignor to himself and Joseph W. Fowle, of same place.—*Garden Hoe.*—January 2, 1866.—This weeding rake has a secondary and adjustable row of teeth adapted to occupy the intervals of the primary row when required.

Claim.—The combination of the two series of teeth, arranged to operate substantially as set forth.

No. 51,894.—Andreas Eigner, Augsburg, kingdom of Bavaria, assignor to Sampson R. Urbino, Roxbury, Mass.—*Varnish for Painting.*—January 2, 1866.—One pound bleached wax, five pounds oil of turpentine, one ounce amber dissolved in linseed oil, half an ounce Venice turpentine, quarter ounce balsam of copaiba.

Claim.—The composition made of the ingredients, and in the manner and for the purpose, substantially as hereinbefore described.

No. 51,895.—Henry Hall, Lambertville, N. J., assignor to himself, Thomas Finley, Isaac Schlichter, and Thomas Hall, Philadelphia, Penn.—*Drawing Roller for Spinning Hemp, Flax, &c.*—January 2, 1866.—The segments of wood which combine to form a wooden wheel present the ends of their fibres to the passing strand.

Claim.—A drawing roller, composed of annularly arranged segments of wood, with its grain in the direction described, and confined between plates, all substantially as and for the purpose herein set forth.

No. 51,896.—Calvin J. Holman, Oshkosh, Wis., assignor to Sparrow M. Nickerson, Chicago, Ill.—*Sawing Staves.*—January 2, 1866.—The block upon the carriage is fed to the cylindrical saw; the staves are received upon an endless belt and fed between rollers to the revolving planer.

Claim.—The arrangement in one machine of the carriage I, saw B, endless carriage R, roller S, and planer T, arranged and operating substantially as and for the purposes herein set forth.

No. 51,897.—Lancelot Kirkup, Brooklyn, N. Y., assignor to himself, Francis D. Taylor, and Charles A. Scott, of same place.—*Spike.*—January 2, 1866.—Explained by the claim.

Claim.—A split spike so constructed that the two halves or prongs will diverge or turn outward, on being driven into the wood, in planes parallel with the split in the spike, substantially as described.

No. 51,898.—John Marchbank, Lansingburgh, N. Y., assignor to himself and Joseph M. P. Price, Philadelphia, Penn.—*Apparatus for Printing Oil Cloths.*—January 2, 1866.—The surface of the block is divided into square sections, each of which is the face of a movable type or four-sided prism of wood, separated somewhat from its fellows to prevent amalgamation of the ink. To print a given color of the pattern, the requisite type are advanced by means of cross levers, which actuate certain type as pre-arranged.

Claim.—First, constructing forms of convertible type for printing in more than one color, so that the portions of the type intended to receive a particular color may be successively advanced to receive the color and retracted to their places in the form, so that all the colors may be printed from one impression, substantially as described.

Second, the combination of the case A and type B, substantially as and for the purpose described.

Third, the combination of the type B, cross-levers C, and bars D, substantially as and for the purpose described.

No. 51,899.—WILLIAM S. MCLEAN, Williamsburg, Ohio, assignor to himself and VOLNEY STOCKTON, of same place.—*Pruning Hook.*—January 2, 1866.—This instrument has two parts, one, armed with a chisel, slides upon the other, which has a double knife in opposition to the chisel.

Claim.—The arrangement of rods A B, tenon and grooves *a a' b b'*, doubled knife edged hook C C', and chisel D, adapted to act by percussion, in the manner set forth.

No. 51,900.—WILLIAM MURKLAND, Lowell, Mass., assignor to himself, CHARLES G. SARGENT, Graniteville, and MOSES A. JOHNSON, Lowell, Mass.—*Machine for Washing Wool and other Fibrous Material.*—January 2, 1866.—The wool is fed from an apron between a toothed roll and a concave, and caught by the spikes on the oscillating cylinder; the latter works above a perforated concave in the tank, and advances the wool toward the discharge end, where it is caught by a revolving picker and transferred by a belt to the squeeze rolls, which deliver it.

Claim.—In a machine for the washing of wool or other fibrous material, the combination of the toothed cylinder with a revolving and traversing worm, and with a worm gear, so that said worm will act as a worm and a rack both in giving the gear and the parts connected with it both an oscillating and a progressive motion, substantially as and for the purpose described.

Also, an adjustable crank, or its equivalent, in combination with the worm rack, for the purpose of increasing or diminishing the oscillations of the picking and washing cylinder, substantially as described.

Also, the combination of the toothed and fluted feed rod, the toothed shell or comb, and the oscillating cylinder for feeding in the material to be washed to the tank, substantially as described.

Also, in combination with the oscillating cylinder, the clearers *k* passing under and around said cylinder, substantially as and for the purpose described.

Also, the combination of the endless open belt with the toothed cylinder R, and passing around said cylinder for the purpose of taking up, receiving, and delivering the washed wool to the squeeze rolls, or to any other point of delivery, substantially as described.

No. 51,901.—DANIEL T. ROBINSON, Boston, Mass., assignor to himself and HOWARD TILDEN, of same place.—*Flour Sifter.*—January 2, 1866.—The sifter is hinged to and vibrates within the scoop; bars on the former agitate the flour and collide with transverse bars in the scoop to clear the meshes.

Claim.—The combination of the scoop, its vibrating sieve, and the double series of transverse bars arranged with reference to each other, substantially as herein described.

No. 51,902.—PETER SWEENEY, New York, N. Y., assignor to JOHN J. FLANNAGAN, Jersey City, N. J., and JOSIAH OAKES, New York, N. Y.—*Rock Drill.*—January 2, 1866.—The cutting face of the drill consists of a number of scolloped wheels obliquely set in the drill head; the drill stock is hollow to introduce steam or water to the cutter; the detritus is removed by a spiral flange on the drill rod, which is raised, lowered, and rotated by a cross-head and feed screws.

Claim.—First, a drill composed of a number of scolloped wheels arranged in a common head, substantially as and for the purpose set forth.

Second, placing two or more of the cutting wheels in oblique positions toward their axles, substantially as and for the purpose set forth.

Third, the combination and arrangement of the screw spindle E E', cross-head G, bevel cog wheels *d d' g g'*, and loose pulley *e e'*, when employed in connection with drill rod H, in the manner and for the purpose explained.

Fourth, the worm *h* mounted on the adjustable shaft *i*, in combination with the worm wheel *f* and screw spindles E E', cross-head G, and drill rod H, constructed and operating substantially as and for the purpose described.

No. 51,903.—CHARLES TREUSDALE, Cincinnati, Ohio, assignor to himself and WILLIAM RESOR & CO.—*Moulder's Clamp.*—January 2, 1866.—The jaws which bear upon the outer edges of the respective halves of the flask are adjustable as to distance by sliding the stems upon each other; they are drawn together and locked by a cam-headed lever.

Claim.—First, the construction of the jaws A and B, substantially as described, and their adaptation to slide upon each other and to be drawn and locked together by the action of a cam-headed lever H I, or its equivalent.

Second, in the described combination, with the sliding jaws A and B, and cam-headed lever H I, and shoulder J, or their equivalents, the provision of the perforated lug G *g*, for adapting a single clamp to a variety of sizes, as explained.

No. 51,904.—WILLIAM PEET and MARIAN L. HYDE, Brooklyn, N. Y., administrators of the estate of JAMES S. HYDE.—*Construction of Railways*—January 2, 1866.—Intended especially for city railways. The longitudinal sleepers are tied together by iron rods, which descend below the paving.

Claim.—The combination of the iron cross-tie with the wooden sleepers, when constructed and arranged substantially as described.

No. 51,905.—PAUL LE BOULENGÉ, Antwerp, kingdom of Belgium, assignor to FRITZ MEERT, New York, N. Y.—*Electro-ballistic Chronographs.*—January 2, 1866.—This is intended to measure very short periods of time, such as that occupied by a projectile in traversing a given portion of its course. The cylinder, whose upper steel portion forms the armature of an electro magnet, is released on the breaking of the circuit by the projectile; paper wrapped on the cylinder receives while falling the pressure of a knife actuated by an escapement; the latter is released by a weight which was suspended from another electro-magnet, whose circuit is likewise broken by the projectile.

Claim.—First, the use of a body falling free and without friction for the measure of time, substantially in the manner herein set forth.

Second, the arrangement of files and circuits to obtain a simultaneous interruption without mechanical aid, as set forth.

Third, regulating the action of the electro-magnets on their armature by means of inverse circuits, and by the substitution of steel for soft iron, (fer doux,) as set forth.

No. 51,906.—HENRY SWAN, No. 40 Charing Cross, England.—*Stereoscopic Apparatus.*—January 2, 1866.—Two triangular prisms are joined by their surfaces to make a rectangular prism. The stereoscopic pictures are attached to adjacent sides of the triangular prisms, and are viewed through one of the unoccupied sides; one of the pictures is transposed to compensate for the reflection of the image.

Claim.—The combination of stereoscopic pictures, prisms, and frames, with reflectors, substantially as herein described.

No. 51,907.—WILLIAM WEILD, Manchester, England.—*Machine for Winding Sewing Thread upon Spools.*—January 2, 1866; patented in England January 22, 1859.—This machine for winding sewing thread upon spools takes the empty spools, winds the thread upon them, stops when they are filled, nicks the edge of the spool, inserts the thread therein, breaks the thread, discharges the filled spools, takes empty ones, starts the machine to wind the thread upon them, and so on continuously.

Claim.—First, the machine as a whole, composed of the elements combined, arranged and operating substantially as set forth.

Second, the brake *b*7 in combination with the devices herein described, or the equivalent to the same, for causing the belt-changing shaft *c*3 to stop the winding part of the machine when the bobbins are sufficiently full.

Third, the combination of the shaper *g'* with the oscillating parts *f*6 and *f*9, the whole operating substantially as and for the purpose set forth.

Fourth, the combination of the shaper, or its equivalent, with the cam *g*2.

Fifth, the combination of the traverse rod *f*5 with the inclines *h*2 and the shaper, or its equivalent.

Sixth, the brake *d*8 and the devices described, or the equivalent to the same, for stopping the motion of the cam shaft.

Seventh, the lever *g*6 in combination with a screw *g*2, by which the adjustment of the lever's fulcrum is effected.

Eighth, the point *r*8, or its equivalent, so operated as to prevent the uncording of the thread from a given point, and to assist in guiding the thread when pulled into the incision made in the edge of the spool or bobbin.

Ninth, the combination of the spring point *r*8 and the incision knife *r*7 upon the same arm.

Tenth, the hook *s*6, or its equivalent, operated substantially as set forth, for drawing the thread into the incision and serving the same.

Eleventh, the mode herein described of securing the thread between the collar of the spindle *k*2 and the end of the bobbin, so that it will wind thereon.

Twelfth, the combination of the point *r*8, incision knife *r*7, hook *s*6, spring *s*8, and thread knife *s*7, as herein set forth for the purpose specified.

No. 51,908.—JOHN B. ATWATER, Chicago, Ill.—*Steam Water Elevator.*—January 9, 1866.—Improvement on Atwater's patent, dated August 1, 1865.—The compressed air in the pressure chamber acts in concert with the steam, to press upon the water in the chamber below and expel it at the eduction opening.

Claim.—First, the construction and arrangement of the within-described apparatus for elevating water from wells, by the direct application of steam upon a body of air which is compressed within a chamber above a column of water, said apparatus being so constructed that it will automatically refill itself with water when the pressure of steam is removed, substantially as described.

Second, in an apparatus constructed and arranged as herein described, forming a communication C between the chambers *a b* and B, which is of less diameter than the said chambers,

for the purpose of presenting as small a cooling surface as possible to the steam, substantially as described.

Third, in an apparatus constructed and operating substantially as herein described, arranging the discharge end of the pipe C′ in such relation to the valve *c2* that steam will impinge thereupon as it enters the chamber *c*, substantially as described.

No 51,909.—Frank R. Atwood, Lowell, Mass., and Abraham Elston, Port Jervis, N. Y.—*Composition for Razor Straps.*—January 9, 1866.—Compounded of sesquioxide of iron 5 parts, emery 160 parts, tallow 80 parts, neat's-foot oil 48 parts.

Claim.—A paste made of the ingredients herein specified, with or without neat's-foot oil, substantially as set forth.

No. 51,910.—E. Barbaroux, Louisville, Ky.—*Pipe Coupling.*—January 9, 1866.—The sections are united by a longitudinal circular tenon and mortise in their respective contacting ends, and are there fastened by screws.

Claim.—A soil or driving pipe for oil and other deep wells, whose sections are united to each other substantially in the manner and for the purpose above described.

No. 51,911.—Fordyce Beals and Major Smith, New Haven, Conn.—*Hollow Auger.*—January 9, 1866.—The adjustable slide limits the diameter of the opening to form tenons of different sizes. The rankness of cut is adjusted by a screw inserted from the rear of the cutter head, to act upon the inner surface of the cutter plate.

Claim.—First, the combination of the slide I with the cutter D, constructed and arranged to operate substantially as and for the purposes specified.

Second, the arrangement and construction of the cutter D, adjusting screw *h*, and set-screw *d*, combined so as to operate for the purpose of increasing or diminishing the depth of cut of the auger.

No. 51,912.—Benjamin F. Bee, Harwich, Mass.—*Salinometer.*—January 9, 1866.—The salinometer glass is contained in a chamber exposed to boiler pressure, where the water surface is brought into sight for observation in connection with the graduated stem. The valve governs the flow of air from the tube and cylinder.

Claim.—First, the combination of the closed vessel for containing the water to be tested, and the instrument for testing it, the same being subject to the boiler pressure.

Second, the arrangement for adjusting and retaining the water line in sight, by the compression of the air contained in the cylinder B and tube C.

Third, the arrangement of the valve *e* and its appendages, when used for the purpose as set forth.

No. 51,913.—Albert Betteley, Boston, Mass.—*Tank for Preparing Peat.*—January 9, 1866.—The inside of the tank is lined with tiles or porous pipes, vertically disposed, to filter the water from the peat. The peat is discharged at the bottom of the tank by a spiral conveyer.

Claim.—The construction of the tank with the provision for separation of water from the peat, substantially as set forth.

Also, combining with a tank so made the screw *c*, for discharging the prepared peat, substantially as set forth.

No. 51,914.—George B. Bieler, M.D., Cincinnati, Ohio.—*Medical Compound.*—January 9, 1866.—A stomachic tincture compounded of fifteen aromatic, cathartic, diaphoretic, and tonic ingredients, sweetened.

Claim.—The compound of ingredients for purposes as specified.

No. 51,915.—John Blackie, New York, N. Y.—*Rope Machine.*—January 9, 1866.—The main frame revolves in one direction, and the inner frames with their reels revolve in the opposite direction; the threads, cords, &c., are respectively and successively associated and entwined to form a complete rope.

Claim.—First, the stationary reel or bobbin holder G, provided with the slotted plate *m* and adjustable arm *i*, mounted upon the hollow journals within the revolving frame I, as shown and described.

Second, in combination with the stationary reel G the main frame A and the inner frames I, arranged to revolve in opposite directions, substantially as set forth.

Third, the combination and arrangement of the operating wheels B C D and E, main frame A, inner frames I, and reels G, operating in connection, as described.

Fourth, in combination with the main frame A of the right and left handed screw R, arranged to operate in connection with the wheels T, as shown and described.

No. 51,916.—John H. Brown, Watertown, Minn.—*Horseshoe.*—January 9, 1866.—The upper side of the heel portion of the shoe is grooved to receive a resilient strip which is interposed between the hoof and the iron shoe.

Claim.—The tapering grooves in the heel portions of the shoe, formed in the manner and of the shape described, in combination with the short tapering section of India-rubber, as and for the purposes set forth.

No. 51,917.—Oscar F. Burton, New York, N. Y., and Lora B. Hoit, Cedar Falls, Iowa.—*Plough.*—January 9, 1866.—The mould board is made of glass; its edge is inserted in grooves in the share, and it is clamped by its upper edge and outer corner to the stock.

Claim.—First, making the mould board of a plough entirely of glass, substantially as and for the purpose described.

Second, the combination of clamps *c d* and V-shaped grooves *a b*, for the purpose of attaching the mould board D, without bolts or screws, substantially as and for the purpose set forth.

No. 51,918.—E. Calderwood, Portland, Maine.—*Window Sash Fastener.*—January 9, 1866; antedated January 3.—The metallic strip inserted in the edge of the sash is thrust against the window casing by a thumb-screw and the sash sustained by frictional contact.

Claim.—The metallic strip *r*, inserted within the side of the sash frames *o*, in combination with a thumb-screw *v*, all being arranged together and operating substantially as herein described and for the purpose specified.

No. 51,919.—J. C. Campbell and M. V. Campbell, Syracuse, N. Y.—*Mode of Sinking Wells.*—January 9, 1866.—The tube is shod with a conical plug, and the lower portion is perforated and lined with wire gauze.

Claim.—The combination of the conical pointed plug B, strainer C, and pipe A, as and for the purpose set forth.

No. 51,920.—John L. Cheney, Lowell, Mass.—*Heddle Eye for Loom Harness.*—January 9, 1866.—The wire is replicated and the loop thus formed is contracted at two places, forming three eyes, divided by particles of solder.

Claim.—The improved heddle eye made substantially as described, viz., of one piece of wire bent into the form exhibited in Fig. 1, and with its extremities arranged at the junction of two of the loops, and having solder or brazing applied to the said junctions and to the said extremities, as specified.

No. 51,921.—John Chilcott, Brooklyn, N. Y.—*Hot-air Furnace.*—January 9, 1866; antedated December 28, 1865.—The flues, of circular section, are arranged in parallel tiers, united by openings to form a continuous convoluted series with intervening air-warming spaces. The passages are formed by counterpart grooves in the adjacent faces of the vertical series of slabs.

Claim.—First, the arrangement, substantially as herein described, of two or more tiers of flues A A, forming one continuous series, through which the gaseous products of combustion from any suitable fireplace circulate one after the other, and a series of intervening, separate, and independent air passages, heated by the said flues.

Second, the construction of such continuous series and intervening air passages, in slabs or plates C D D E, in which each of the said flues and air passages is half in one and half in the next slab, a plate above or below it, substantially as herein described.

No. 51,922.—John Chilcott, Brooklyn, N. Y.—*Flue and Setting of Open Boilers.*—January 9, 1866; antedated December 28, 1865.—The flue, after following a sinuous course under the bottom, takes an ascending spiral course, enveloping the sides of the kettle.

Claim.—The combination, for heating a melting pan, kettle, or open boiler, of a series of flues running back and forth under the bottom of the said pan, kettle, or boiler, and a series of flues surrounding the same, the whole forming a continuous system, through which there is a circulation from the furnace or fireplace to the chimney or uptake, substantially as and for the purpose herein specified.

No. 51,923.—John Chilcott, Brooklyn, N. Y.—*Furnace for Steam Boiler.*—January 9, 1866; antedated December 28, 1865.—Underneath the grate of the enclosed furnace is an inclined slab, whose lower and rear end rests upon the bottom of the ash-pit; tenons on the forward end are supported in grooves which permit the adjustment of the front edge of the slab relatively to the front of the furnace. A rake hole in the slab permits the removal of ashes. Air is admitted through the furnace walls and fire bridge to the ash-pit.

Claim.—First, the slab F arranged across the ash-pit C below the grate B, substantially as and for the purpose herein specified.

Second, the arrangement of the opening *e*, passages *f g h*, and opening *i*, in combination with each other and with the furnace and slab F, substantially as and for the purpose herein described.

Third, the arrangement of the opening *e*, passages *l l m n*, and orifices *p p*, in combination with each other and with the furnace and ashpit, substantially as and for the purpose herein specified.

No. 51,924.—ELI COLE, Tarrytown, N. Y.—*Shutter Fastening.*—January 9, 1866.—The tumbler catch in a box attached to the window casing is engaged by a catch on the shutter; the disengagement is only from the inside.

Claim.—The combination of the box *a*, catch *e*, and catch *f*, all arranged with reference to the sash D and blind or shutter C, substantially as set forth for the purpose specified.

No. 51,925.—ADAM G. COLES, Mamaroneck, N. Y.—*Well Drill.*—January 9, 1866; antedated January 3, 1866.—The drill stock has a central cutter and removable, reversible, radial cutters with extended edges. The shanks of the cutters are retained by a sleeve and key in the longitudinal recesses of the drill stock.

Claim.—First, the construction of a drill for drilling or boring oil or other artesian wells, or other drilling operations in the earth's crust, with a central cutter and a surrounding series of reversible, movable, radial cutters, substantially as herein specified.

Second, the combination of the dovetail-headed cutters *a d a d*, the longitudinal grooves in the stock, the surrounding collar B, and the key *f*, substantially as and for the purposes herein set forth.

No. 51,926.—ALONZO B. CONDE, Albany, N. Y.—*Clasps for Leather Straps.*—January 9, 1866.—The hinged portion of the clasp is linked to the loop on the opposite hame; when shut it is secured by the loop which draws upon the hook inside the pivot of rotation.

Claim.—The clasp formed and operating as described and for the purposes set forth.

No. 51,927.—ALEXANDER S. COX, Washington, D. C.—*Railroad Station Indicator.*—January 9, 1866.—The rod is drawn back, compressing a spring and rotating the belt upon which the successive stations are imprinted and consecutively exposed at an opening. The return of the rod slips the spur wheel upon its shaft, and prepares the apparatus for a recurrent action.

Claim.—First, the combination of a rectilinear reciprocating draw rod D, which is provided with a rack *r*, the spur wheel *f*, pawl *g' i'*, and ratchet wheel *g*, with the band roller B and cylinder C, the whole operating substantially as described.

Second, providing the station indicator with a rectilinear draw rod D, which is acted upon by a spring *s*, and adapted for actuating the mechanism that moves the band *a*, substantially as described.

Third, the combination of the band roller B and winding-up cylinder C with brake straps *c c'* and a tension adjuster, substantially as described.

Fourth, the studded ratchet wheel *g*, in combination with the stop pawl J and the belt roller B, substantially as described.

No. 51,928.—GEORGE CROMPTON, Worcester, Mass.—*Fancy Loom.*—January 9, 1866.—This apparatus operates the heddles, and through them the warp of fancy looms; the devices are explained by the claim and drawings.

Claim.—First, the construction of the vertical heddle levers, having slots or mortises with pins passing through them for the support of the double hooks, as described.

Second, the construction of the loop, with its spur-like branch, attached to the extremities of the vertical levers, as described.

Third, the construction and combination of the two pairs of oscillating levers 21 21 and 24 24, and their respective bars 27 and 26, forming the lifter, depresser, and eveners, with the double hooks and pattern cylinder or chain, as described.

Fourth, so constructing the bearings of the rod 39 that it may be raised and return again to its original position, substantially as and for the purpose set forth.

No. 51,929.—FRANCIS CURTIS, Malden, Mass.—*Roll for Pressing, Sizing, and Calendering Paper.*—January 9, 1866.—Explained by the claim.

Claim.—First, as a new article of manufacture, the employment of hard rubber rolls in pressing, calendering, and sizing paper.

Second, as a new article of manufacture, pressing, calendering, and sizing rollers, to be used in the manufacture of paper when made of hard rubber or iron, or any other material covered with hard rubber.

No. 51,930.—LORENZO C. DAM, Lowell, Mass., and JOHN WIGLEY, Milford, N. H.—*Self-acting Mule.*—January 9, 1866.—The improvement relates to the building of the cop, whose winding is equalized by the expansion drum.

Claim.—The expansion drum, formed by the cone and hinged arms, or their equivalents, substantially as herein described and for the purpose specified.

Also, the combination of the expansion drum with the scroll cam T and the pulley K, or their equivalents, by which the velocity of the cylinder that drives the spindles is increased or diminished as required.

Also, the combination of the faller wire and the attached nippers with the band pulleys, screw Y, and lever 19, or their equivalent, for moving the cone S to the right or the left at the right time, and to such a distance as may be necessary to impart the requisite velocity to the cylinder 46.

No. 51,931.—SAMUEL DARLING, Bangor, Maine.—*Inkstand.*—January 9, 1866.—The inkstand is made in two parts, each inclined, and the upper part adjustable on the lower one in the plane of their junction, to adjust the dipping hole over ink of the desired depth.

Claim.—The combination and arrangement of the pen cavity *c*, the projection *b*, and the circular groove *d*, with the pen passage or tube *a*, the ink reservoir A, and the base B, when such base and reservoir are made and applied together with inclined surfaces at their junction, arranged in manner and so as to operate substantially as described.

Also, the arrangement of the vent hole *e* in the upper part of the supply tube or dipping cup, in manner and for the purpose specified.

No. 51,932.—CHRISTOPHER DUCKWORTH, Mount Carmel, Conn.—*Shuttle-box Motion in Looms for Weaving Figured Fabrics.*—January 9, 1866.—The shuttle-boxes are adjusted vertically to bring the shuttles in the required succession to the pickers; a pattern chain governs the movements of the hooked connecting rods of different lengths, and these operate through intervening devices upon the rods to which the shuttle boxes are secured. A pawl lever operates upon such one of the connecting rods as may be lifted by the pattern chain.

Claim.—First, the pawl lever J suspended in front of the cam *h*, in combination with the hooked arms *c c*1 *c*2 and *c*3 *c*4 *c*5, substantially as described.

Second, attaching the hooked arms *c c′*, or their equivalents, at different distances from the axis of motion of their oscillating lever F, substantially as described.

Third, arranging hooked arms, which are indirectly connected to the pin cylinder, or its equivalent, so as to be operated by it in such manner that a vibrating pawl lever J will operate upon all of them at proper times, substantially as described.

Fourth, the combination of the hooked arms *c c′*, oscillating arm F, and a pattern governing device, substantially as described.

Fifth, pivoting the cam rods G G′ to arms F′ F, the movements of which are controlled by a pin cylinder, or its equivalent, substantially as described.

No. 51,933.—JOHN H. ELWARD, Polo, Ill.—*Animal Trap.*—January 9, 1866.—The box is open at each end and forms a track for the animal. A lever is adjusted in bearings, around which a spring is coiled; a stop rotated by a spring forms a detent for the lever, which is disengaged by the motion of the bait trigger, dealing a blow to the animal and throwing it out of the box. The lever continuing its rotation is caught and set by the stop.

Claim.—The combination of the revolving lever with a revolving stop, when arranged and operating substantially in the manner and for the purpose described.

No. 51,934.—A. B. ELY, Boston, Mass.—*Telegraph Insulator.*—January 9, 1866.—The metallic hook is socketed in a hard rubber plug which enters the telegraph post. A flaring cap is rooted to the insulator plug and its in-turned rim approaches the hook.

Claim.—First, the hard rubber or gutta-percha cap, having its lower edge in the form of a bead and terminating in a flange or disk bent inward toward the hook, substantially as and for the purpose described.

Second, the combination of two caps with the hook, substantially in the manner and for the purpose described.

No. 51,935.—A. B. ELY, Boston, Mass.—*Insulating Telegraph Wire.*—January 9, 1866.—The wires or their supports are coated with paraffine or a compound of paraffine and caoutchouc or gutta-percha, with the addition of a fibrous envelope if necessary.

Claim.—First, insulating telegraphic wires, or their supports, with the material applied, in the manner substantially as and for the purposes set forth.

Second, the new article of manufacture herein described, constituting an insulated wire, made substantially as described for the purposes set forth.

No. 51,936.—WILLIAM FOSTER and ROBERT FOSTER, Brooklyn, N. Y.—*Rotary Pump.*—January 9, 1866.—The wheel is set eccentrically in the cylinder, one head being adjustable by set screws to compensate for wear. The pistons are tightened by metallic strips in the guide slots and slide diametrically.

Claim.—First, the adjustable head E, in combination with the cylinder A, piston wheel B, and sliders D, substantially as and for the purpose set forth.

Second, the combinations of the set screws *a* and tubes *b* with the adjustable head E, and with the cylinder head and piston, substantially as and for the purpose specified.

Third, the V-shaped adjustable strips *c*, in combination with the sliders D of the piston wheel, substantially as and for the purpose described.

No. 51,937.—SAMUEL T. FOWLER, Brooklyn, N. Y.—*Fire-proof Safe.*—January 9, 1866.—The space between the inner and outer plates is filled with hydraulic cement made plastic with hot water.

Claim.—The new article of manufacture, consisting of a safe filled with hydraulic cement, as described, for the purpose specified.

Second, preparing the cement to fill the same as aforesaid by mixing it with hot water, as set forth.

No. 51,938.—WILLIAM B. GEER and ALMOND H. PALMER, Portland, Ill.—*Wagon Box.*—January 9, 1866.—The shutters which form the bottom of this dumping wagon bed are released by turning a crank and levers which sustain the chains by which the shutters are suspended.

Claim.—The arrangement of the various portions of the machine, for the purposes set forth.

No. 51,939.—SOLOMON GODFREY, Peoria, Ill.—*Bolt for Flouring Mills.*—January 9, 1866.—Perforated pipes emit jets of air upon the exterior of the bolting cloth.

Claim.—First, applying a blast of air to the exterior surface of a bolting reel substantially in the manner described, for the purpose of cleaning the bolting cloth and cooling the flour.

Second, the combination with a bolting reel of one or more perforated air-pipes arranged to discharge the air in jets upon the external surface of the cloth, substantially as described.

Third, the combination with the bolting reel of one or more air-pipes capable of turning on their axes to vary the angle at which the blast strikes the cloth, as set forth.

No. 51,940.—A. L. GRINNELL, Des Moines, Iowa.—*Gate.*—January 9, 1866.—The gate is attached by one lower corner to a shaft and opens by vibration in a vertical plane, side-braces sustaining it laterally.

Claim.—First, mounting a gate upon a shaft so arranged that the gate is opened by turning it up in a vertical or nearly vertical position, and closed by throwing it in a horizontal position.

Second, the combination with each other of the post A, shaft E, post F, uprights D D′, slats C, braces G H and I, substantially as shown and described.

No. 51,941.—JAMES T. GUTHRIE, Leesburg, Ohio.—*Mode of Releasing Horses from Carriages.*—January 9, 1866.—The whiffletree is divided at its mid-length and each half is pivoted so as to rotate and throw off the traces when the central rear-bolt is depressed.

Claim.—The double whiffletrees *b*, retaining-bolt E, arm D, spring *c* and strap F, in combination with cross-bar B, substantially as above described and for the purpose set forth.

No. 51,942.—JOEL P. HAWKS, Troy, N. Y.—*Currier's Knife.*—January 9, 1866.—To enable the workman to finish or whiten the leather upon a table instead of over a beam, knives are set obliquely in a holder attached to the extended portion of a double-handled stock.

Claim.—First, the above-described currier's knife consisting of the stock A, constructed with the above described projection for holding or receiving the shanks B B B′, the shanks B B B provided with screws and nuts for holding or securing in place the jaws G G′, combined and operated in the manner and for the purposes specified.

Second, the jaws G G′, constructed and arranged in the manner described for the purpose of setting the knives at any desired angle with the stock.

Third, the shanks B B B, in combination with the jaws G G′ and stock A, arranged and operating in the manner and for the purpose above specified.

No. 51,943.—HORACE HAYWARD, Fitchburg, Mass., assignor to self and THOMAS H. DODGE, Worcester, Mass.—*Cutting Uppers for Balmoral Boots.*—January 9, 1866.—The major piece constitutes the foot and one side of the leg of the boot, and the minor piece the remaining side of the leg. The junction of the two is along the rear seam, then forward and upward to the bottom of the front opening.

Claim.—First, cutting the parts A B and C, which form the top and sides of the foot and one side of the leg of a high-top balmoral boot, substantially as shown and described.

Second, cutting the part D to form one side of the leg of a high-top balmoral boot, substantially as shown in Fig. 2 of the accompanying drawings.

No. 51,944.—HORACE HAYWARD, Fitchburg, Mass., assignor to himself and THOMAS H. DODGE, Worcester, Mass.—*Balmoral Boot.*—January 9, 1866.—The upper and leg of the boot are made of parts cut as described in No. 51,943, of even date herewith.

Claim.—A high-top balmoral boot, the upper and leg of which are cut and made substantially as shown and described.

No. 51,945.—S. E. HEWES, Albany, N. Y.—*Well Tube Packing.*—January 9, 1866.—The coupling, by rotation of the tubing, may be adjusted to discharge through its apertures the superincumbent water.

Claim.—First, a valve constructed and operated substantially as described, and so arranged within an oil-well as to permit or prevent the downward passage of the surface water, as and for the purpose explained.

Second, the described arrangement of the packing bag, relatively to the water-valve and stationary and rotary tubing.

Third, the combination of the coupling B, valve *b*, opening *c*3, flange *c′*, and rim *c*, substantially as and for the purpose specified.

Fourth, the rim *c*, in combination with the retaining annulus E, the ears *f*, and collar F, for holding the lower end of the packing bag, as explained.

Fifth, the adjustable retainer G, and annulus H, in combination with the adjustable supporting collar *a*, as and for the purpose set forth.

Sixth, an adjustable collar *a* arranged upon a well tube, when used to sustain a movable packing, substantially as described.

No. 51,946.—ELIAS S. HUTCHINSON and HUGH L. MCAVOY, Baltimore, Md.—*Apparatus for Carburetting Air.*—January 9, 1866.—The air-forcing cylinder is placed within the carburetting cylinder, and the two revolve together; the air is received and the carburetted air delivered through openings in the hollow journals.

Claim.—First, a close casing of any form suitably subdivided, and adapted to force and carburet air by its rotation, and the gravity of the liquid.

Second, the air-box H, constructed and employed substantially as and for the purpose set forth.

No. 51,947.—DE WITT C. JEWETT, Sand Spring, and ASA C. BOWEN, Bowen's Prairie, Iowa.—*Hay Loader.*—January 9, 1866.—The rake rope passes through a swinging frame pivoted to the wagon bed, and thence over the fore wagon standard, to a pulley on the tongue hounds and the singletree of the horse. The frame is raised, with its load, by the contact of the fork bail.

Claim.—First, the manner, substantially as herein set forth, of working the rake independently of the swinging frame, and then working both the rake and swinging frame together, for the purpose set forth.

Second, so applying the rake to a wagon, and controlling its operation, that the hay may be raked and lifted from the ground, and carried from one end of the wagon to the other, or to any point between the two ends of the wagon, substantially as herein described.

Third, the arrangement of the several parts, substantially as described, whereby the rake and swinging frame are operated by the direct pull of the horse or horses attached to the wagon.

No. 51,948.—JEROME KIDDER, New York, N. Y.—*Electrical Bath Tub.*—January 9, 1866.—A sliding electrode is adjustable beneath the perforated false bottom of the bath, and is moved by the insulated conducting wires, which traverse upon rollers. The upper electrode floats, and is applied as required.

Claim.—First, the employment or use of the buoyant electrode J, in connection with the sliding one G, arranged or applied to a bath, in the manner shown, or in any equivalent way, for the purpose specified.

Second, the attaching of the sliding electrode G to the conducting wire *a*, enclosed within a non-conducting elastic tube F which is fitted around pulleys D E, connected with the bath as shown, for the purpose of enabling said electrode to be moved, substantially as set forth.

No. 51,949.—WORLEY LEAS, Kokomo, Ind.—*Apparatus for Raising Dough.*—January 9, 1866.—The sides and bottom of the dough tray are enveloped by a steam or hot-water jacket.

Claim.—The combination of the dough tray B and the steam or water-chest A, substantially as and for the purposes described.

No. 51,950.—DAVID LIPPY, Mansfield, Ohio.—*Horse Hay Fork.*—January 9, 1866.—The tripping rod is rotated by the dumping cord disengaging a lip from the detent rod on the bail, and allowing the fork to vibrate on its hinge, and discharge the load.

Claim.—The rod G, provided with a crank H, to which the tripping rope I is attached, and also provided with a lip *e*, and attached to the head A of the fork, in combination with the bail E, connected to the arm C of the fork head A, and provided with a rod *c* for the lip *e* of rod G to catch over, all arranged substantially as and for the purpose herein set forth.

No. 51,951.—H. B. LIVERMORE, Ashland, Penn.—*Fish-hook.*—January 9, 1866.—The plane of the loop is at right angles to that of the hook; when the pierced surface bears against the loop the hook is directed forward.

Claim.—The guard or loop B, applied to a fish-hook, substantially as and for the purpose specified.

No. 51,952.—ALBERT W. LIVINGSTON, Sidney, Ohio.—*Railway Signal.*—January 9, 1866.—An adjustable hook on the cab of the locomotive strikes a trigger on a wayside post and sets a signal.

Claim.—First, the arrangement of devices herein described for signalizing the approach of trains, the same consisting of the right angular lever arms L L, respectively attached to communicating and signalizing posts C and S, to the latter S′ of which are connected in a proper manner any desired signal, either flag, lamp, &c., in combination with the hook of a locomotive cab, or other suitable device, the whole operating together substantially in the manner specified.

Second, hanging the cab hooks upon the cab so that they can be thrown out or in of the plane of operation at pleasure, substantially as specified.

No. 51,953.—JOHN MADDEN, Cleveland, Ohio.—*Artificial Leg.*—January 9, 1866.—The mode of articulation of the knee prevents flexure when the weight of the body is in the rear of the joint. The leg is suspended by a strap, and the thigh socket hinged to a truss. The foot, and the upper and lower sections of the leg, are connected by a rod hinged at each articulation.

Claim.—First, the strap *m*, truss T, connected to the socket by the jointed plates S L with the spring in the said joint, or its equivalent, when constructed and arranged as and for the purpose set forth.

Second, the strap *p'*, catch P, rack R, and spring J', when arranged in combination with an artificial leg, and operating substantially as and for the purpose set forth.

Third, the rod D, joint C, roller *e*, and strap *c'*, in combination with the spring E, slide *f*, and leg, substantially as and for the purpose set forth.

Fourth, the tension-rod H, and spring *g*, in connection with the double ball and socket-joint on the plate F, and cross-piece *a*, when constructed and arranged substantially as and for the purpose set forth.

Fifth, connecting the sections of the leg together, by means of the rod D, forming a jointed connection at each end of said rod, when arranged substantially as herein set forth, for the purpose specified.

No. 51,954.—EMMONS MANLEY, Marion, N. Y.—*Door Latch.*—January 9, 1866.—The handle being turned in either direction, throws one of the projections of the double cam against one of the limbs of the crescent-shaped tumbler, and draws the latch.

Claim.—The slotted latch A, with the pivoted tumbler E, cam D, and stop *m*, constructed and arranged as set forth.

No. 51,955.—JOSEPH T. MARTIN, New York, N. Y.—*Propeller.*—January 9, 1866.—The paddle frames reciprocate longitudinally of the vessel; the buckets are opened and closed by the resistance of the water, and the direction of their closure for forward or stern movement is determined by a transverse frame.

Claim.—First, in propellers which operate by means of buckets or floats, which are alternately opened and closed by the resistance of the water, changing the direction in which the buckets open and close by means of vibrating bars P, carrying a transverse frame Q, which arrests the buckets, substantially as above described.

Second, the triangular buckets T, in combination with the conical bucket frame O, within which they swing, substantially as above described.

Third, the detent carriages U, carrying detents L and M at opposite ends, in combination with the racks K and cords I J, substantially as above described.

Fourth, the detent carriages U, in combination with the vibrating bars P, which carry the transverse frame Q, substantially as described and shown.

No. 51,956.—JOHN MERLETT, Bound Brook, N. J.—*Pneumatic Spring for Cars.*—January 9, 1866; antedated December 28, 1865.—The plunger reciprocates vertically in the central cylinder, which is surrounded by an annular air-chamber. A liquid is interposed between the cushion of air and the head of the plunger.

Claim.—First, the construction of a pneumatic spring with an annular air-chamber A2 surrounding and communicating at the bottom with the cylinder A, in which the plunger B or its equivalent works, and separated from the said plunger or its equivalent by an interposed column of liquid, substantially as and for the purpose herein specified.

Second, the cap *b*3 attached to the plunger B, and combined with the external cylinder A of the annular air-chamber, to form a guide for the said plunger, substantially as herein specified.

No. 51,957.—J. A. MINOR, Middletown, Conn.—*Folding Lunch Box.*—January 9, 1866.—The top, bottom and ends are hinged to one of the sides; the other side is made in two parts hinged together and to the ends.

Claim.—First, the combination of the side D of a folding lunch box with the cover B and bottom E, by hinging the said cover and bottom to the upper and lower edges of said side, substantially as described and for the purpose set forth.

Second, the combination of the ends F and G of a folding lunch box with the side D, by hinging the said ends to the end edges of said side. substantially as described and for the purposes set forth.

Third, the combination of the side H I, made in two pieces hinged together with the ends F and G, by hinging the said side to the said ends, substantially as described and for the purpose set forth.

No. 51,958.—HIRAM NASH, Cincinnati, Ohio.—*Washing Machine.*—January 9, 1866.—The corrugated periphery of the segment rubber rolls upon the corrugated bed; a spring presses upon its traversing axis.

Claim.—The combination of the longitudinal bars D D, springs *h h*, and friction rollers *f f*, with the travelling rubber C, when so arranged as to produce pressure on said rubber in all positions, substantially as set forth.

Also, in combination with the travelling rubber C, thus arranged, the arrangement of the jointed double connecting rods *i i'* and double levers G G' in such a manner that the rubber may be operated by a direct action either at the end or side of the machine, as described.

Also, forming the rubber C in a segment of a cylinder, and so arranging it in combination with the bed B that it may be turned up at each end for the reception or removal of the clothes and without removing it from the receptacle or depressing the levers, substantially as described.

Also, the special construction and arrangement of the operating parts of the machine, the same consisting of the rubber C, rollers *f f*, bars and spring D *h*, connecting rods *i i'*, and levers G G, the whole operating substantially in the manner and for the purpose herein set forth.

No. 51,959.—F. D. NEWBURY, New York, N. Y.—*Breech-loading Fire-arm.*—January 9, 1866; antedated December 29, 1865.—The barrel revolves horizontally on the stock. An interposed plate holds the barrel in place while firing, and ejects the spent capsule.

Claim.—The plate P shaped as described, and sliding between the barrel and frame or stock of the piece for the purpose of locking them together during the act of firing, and of removing the empty cartridge shell from the barrel by the movement of the barrel as it is turned upon the frame in order to make room for another cartridge, substantially as the same is set forth and described in the within specification.

No. 51,960.—JOHN NORTH, Brooklyn, N. Y.—*Press for Striking up Metal.*—January 9, 1866.—The edges of the metal are clamped by a collar against the face of the die. The intaglio is raised to meet the collar, and the cameo descends through the collar to "strike up" the plate. Both motions are performed by one cam.

Claim.—First, the combination of the stationary collar Y, movable plug or shaft W, cam S, and adjusting screw U, all constructed, arranged and operated in the manner set forth.

Second, in combination with the above, the punch A2 constructed and operated as described.

Third, operating the punches A2 and W by means of the cam S, constructed and arranged substantially as described.

Fourth, the cam-plate S, hollow plug or shaft, provided with a follower or ejector, operated by the curved arm of said cam or its equivalent, arranged and connected together, and with the driving power used substantially in the manner described, and so as to operate with regard to the fixed collar of the machine, as and for the purpose specified.

No. 51,961.—T. C. PAGE, Holyoke, Mass.—*Wrench.*—January 9, 1866.—An auxiliary jaw frame with serrated edges is slipped upon the bar, and forms a toothed face to one or the other of the jaws.

Claim.—Securing the auxiliary serrated jaw to either the stationary or sliding jaw of a screw wrench or to the bar thereof, in the manner substantially as above described.

No. 51,962.—S. R. PARKHURST, Bloomfield, N. J., assignor to EMILY R. PARKHURST, same place.—*Cotton Gin.*—January 9, 1866.—The cotton is automatically fed to the ginning cylinder by a toothed feeding cylinder which takes it from the hopper, a stripper throwing back the superfluous cotton and a brush assisting it towards the gin. The cotton from the ginning cylinder passes between condensing rolls.

Claim.—First, in combination with mechanism for ginning cotton, automatic mechanism for removing from a mass of cotton a supply of cotton and seeds to be transferred in a regular manner to the ginning mechanism, for the purpose and substantially as set forth.

Second, in combination with a ginning mechanism, a feeding cylinder or surface armed with teeth, to take the cotton gradually from a hopper and convey it to a position for delivery to the ginning cylinder, substantially as specified.

Third, the combination of the following four devices: first, a ginning cylinder; second, a feeding cylinder or surface armed with teeth to take the cotton from the mass in the hopper; third, the stripper or equivalent mechanism to keep the surplus cotton in the hopper; and fourth, a brush or cylinder to transfer the cotton from the feeding surface to the ginning cylinder, substantially as set forth.

Fourth, the combination of a feeding cylinder or surface armed with teeth, a ginning cylinder, and a revolving stripper to remove the seeds from the cotton, substantially as specified.

Fifth, a pair of condensing cylinders formed of gauze or finely perforated surfaces, and sustained by vertical shafts, substantially as specified, so that the fibre shall be delivered from a vertical opening and pass away in the form of a loose sliver or roving, as set forth.

Sixth, the perforated cylinders *v v* on vertical shafts, in combination with the trunk *x*, through which the blast of air is conveyed away, as set forth.

No. 51,963.—S. J. PARMELE, Killingworth, Conn.—*Lifting Jack.*—January 9, 1866.—The lever is pivoted at the summit of a rack-bar, which is adjustable vertically in a pillar. A locking bar couples the lever to the rack to maintain the lever in its depressed position.

Claim.—The slide F, in combination with the lifting lever D and locking-bar E, substantially as and for the purpose specified.

Also, the combination of the catch-bar C and spring *e* with the rack-bar A, and lifting lever D, and locking-bar E, substantially as shown and described.

No. 51,964.—GEORGE W. PARSONS, Harrisburg, Penn.—*Broom Head.*—January 9, 1866.—The brush is clamped between corrugated plates tightened by set screws. The edges of the plates are embraced by sliding, taper clamp plates.

Claim.—First, the employment of corrugated metal plates for broom heads, substantially as and for the purpose set forth.

Second, the combination of the corrugated plates and the taper sliding clamps, substantially in the manner and for the purpose set forth.

No. 51,965.—F. S. PEASE, Buffalo, N. Y.—*Pump.*—January 9, 1866.—The float in the pump-stock is buoyed by the ascending column of water and actuates the valves of the air pump. The vertically elongated nozzle increases the range of the float, and the downcast air pipe is closed at pleasure by a stop-cock.

Claim.—First, the combination of the float on the water in the pump-stock, or in a chamber connected therewith, with the necessary connecting portions, such as the rod, the rocking arm P, and the rod Q, and the cocks (or either of them) which regulate the passage of the air through the pipes D and E, which connect with the vacuum and pressure chambers respectively.

Second, the vertically elongated pump nozzle G, in combination with the float K.

Third, in combination with the rotary valve, as described, the combination of the cock T with the pipe F, for shutting the compressed air in said well pipe, for the purpose described.

Fourth, in combination with the rotary valve, as described, the valve or cock in the waste-pipe I, for the purpose described.

No. 51,966.—GEORGE PENGEOT, Buffalo, N. Y.—*Lantern.*—January 9, 1866.—The guard wires are secured to the base, as usual, and are crossed over each other in the chimney, above the globe.

Claim.—Carrying the wire guards over and crossing them directly above the glass globe, and in contact therewith, (or nearly so,) as shown at F′, and fastening the ends thereof at the base, as shown at *g*, so as to protect and hold the glass in place, as set forth.

No. 51,967.—FRANK P. PFLEGHAR and WILLIAM SCHOLLHORN, New Haven, Conn.—*Compasses and Calipers.*—January 9, 1866.—The beveled edge of the segment is clamped by a wedge, which is operated by a set screw.

Claim.—The combination of the bevelled segment D, and the key *a*, with the leg A of compasses or calipers, constructed and arranged to operate substantially in the manner and for the purposes specified.

No. 51,968.—J. C. PLUMER, Boston, Mass.—*Boot and Shoe.*—January 9, 1866; antedated December 26, 1865.—The upper surface of the sole has transverse and diagonal inclinations in accordance with the configuration of the foot, and depressions to form bearing points for the three natural protuberances of the foot.

Claim.—First, a boot or shoe constructed with the inclination of the upper or treading surface of the sole, as described.

Second, the depressions G L, as described.

Third, the surfaces as described, in combination with the depressions, as described.

Fourth, constructing a boot or shoe, having a sole with the inclinations of surface and the depressions, as described.

Fifth, a boot or shoe, with the inclinations and depressions of the treading surface of the sole, as and for the purposes described.

No. 51,969.—STEPHEN B. REED, Stuyvesant, N. Y.—*Horse Rake.*—January 9, 1866.—The rake head is pivoted to a supporting frame which is hinged to the axle; the rake is tripped by a lever which depresses the points of its teeth, relieves the holder bar in the rear, and permits the rake head to revolve.

Claim.—First, the combination of the levers *e e* with the rectangular supports B B, hinged to the axle D, and with the shaft of a revolving hay-rake A, all substantially in the manner and for the purpose herein set forth.

Second, the combination and arrangement of the auxiliary stay-levers *r r*, with the operating levers *e e*, and the revolving rake A, substantially in the manner and for the purpose herein set forth.

No. 51,970.—SEYMOUR ROGERS, Pittsburg, Penn.—*Belt Stretcher.*—January 9, 1866.—The belt is placed around a couple of pulleys, and its ends approached to lap upon each other for sewing. The stretcher consists of a pair of clamps and a tightening cord, the leather in each clamp being pinched by a serrated eccentric.

Claim.—First, the combination of the eccentric rollers C and D, with the square shafts, K and J, substantially as described and for the purpose set forth.

Second, the combination of the roller I, with the end pieces G and H, ratchet wheel L, and pawl M, substantially as described and for the purpose set forth.

Third, the combination of the rope N, or its equivalent, with the end pieces F and E, and rollers I, substantially as described and for the purpose set forth.

No. 51,971.—EMILE ROUSSEIL, West Newark, N. J.—*Life Preserver.*—January 9, 1866.—Explained by the claim.

Claim.—A life-preserver, constructed of two hollow drums or floats with openings to receive valuable papers or documents, and with depressions *d*, to receive the straps *e*, in combination with the body belt B, shoulder straps C, and pocket *g*, intended to receive a signal flag D, substantially as and for the purpose described.

No. 51,972.—NEWTON ROWLAND, Hilltown, Penn.—*Calculating Machine.*—January 9, 1866.—The circular graduated disk is revolved within an outer stationary, concentric ring similarly graduated and numbered, but in the opposite direction; an outer graduated and revolving annular plate is moved one division to a revolution of the central disk.

Claim.—The arrangement of the machine, consisting of the revolving graduated toothed disk, operated by the arm and spring-pawl, the intermediate stationary graduated annulus, and the outer graduated and revolving annular plate, upon whose face the valves of the inner revolving disk are centuplicated, as described and represented.

No. 51,973.—JAMES SARGENT and H. W. COVERT, Rochester, N. Y.—*Lock.*—January 9, 1866.—The lock has a central shaft and a sleeve whereon the permutation wheels are arranged to receive the dog of the tumbler which is pivoted to the bolt; when the dog rests on the periphery of the wheels the tumbler abuts upon a stop. The bolt is thrown by the engagement of the bit with the tumbler, and the latter raised by the cam, relieving the dog of all active effort.

Claim.—The combination and arrangement of the bit *h*, and cam *i*, with the tumbler E, pivoted directly to the bolt B, in such a manner as to transfer the throwing action from the dog and notches to the bit, and thus obviate the strain on the dog and notches, substantially as herein specified.

Also, making the brakes that secure the centre of the wheels with long arms *p p*, having a proper degree of elasticity, and employing in combination therewith the double-faced cam *r*, the whole so arranged as to avoid rigidity of the parts, and holding them securely in place, substantially as described.

Also, in combination with cams *r r*, of suitable form for securing the centres of the permutation wheels in place, and with a suitable key G for turning the cams, the shoulders *b' c'* forming stops for limiting the motion of the key, substantially as and for the purpose herein set forth.

Also, adjusting the length of the shaft D to adapt it to doors of different thickness by means of the longitudinal notch *f'*, and the cap *g'*, substantially as described when the same are used in combination with the mechanism of a lock.

No. 51,974.—JOHN SCOTT, Ocala, Fla.—*Truss.*—January 9, 1866.—Each end of the belt, and one end of the strap which passes under the thigh, are attached by a single pivot to the face plate of the pad.

Claim.—Attaching each end of the band B and one end of the strap C to the face plate of the pad by a single pivot, substantially as and for the purpose described.

No. 51,975.—M. R. SHALTERS, Alliance, Ohio.—*Harvester.*—January 9, 1866.—The vibrating gear frame carrying the crank shaft and its connections is connected directly to the shoe to maintain the relative position of the cutter bar and finger when the latter is adjusted vertically.

Claim.—First, the vibrating frame H H', constructed and arranged as set forth, carrying the crank shaft I, and suspended from the main frame A A by the arms *e* and J, by pivots in the line of the axis of the secondary shaft extended, and retaining the pinion *g* in gear with the spur wheel F, in any position of the vibrating frame.

Second, the cam R and link *r*, in combination with the way *m'*, when arranged and operating conjointly, substantially as and for the purpose set forth.

No. 51,976.—HAMILTON E. SMITH, Cincinnati, Ohio.—*Portable Gas or Petroleum Cook Stove.*—January 9, 1866.—The table of the stand supports the culinary vessels of which the oven has lower and upper apertures with side flues. The lamps or burners below are disposed to act upon such of the vessels as may be desired.

Claim.—First, the arrangement of a series of lamps or burners, of which part are shiftable, in the described combination with an oven G, having side flues H H' discharging into its upper part, and one or more heat inlets C C' at its lower part, for the purposes set forth.

Second, the arrangement of stand A and its described accessories adapted for optional baking or boiling, and for conversion to the use of movable lamps or ordinary gas-burners, in the manner set forth.

No. 51,977.—A. J. STAFFORD and S. CROSSMAN, Essex, N. Y.—*Washing Machine.*—January 9, 1866.—The rubber has a circular reciprocating motion, and with its driving mechanism may be vibrated vertically on a hinge to remove the rubber from the tub.

Claim.—The frame J with the rubber shaft K attached in connection with the driving wheel H and roller I, or equivalent gearing, and the crank *f* provided with a wrist pin *j*, which works in an oblong vertical slot in the outer end of frame J, all arranged substantially as shown and described to give a circular reciprocating motion to the rubber M.

Also, the attaching of the bar C, to which the driving wheel H is connected, to the tub A by means of a joint or hinge; and the connecting of the board F to said bar C, for the purpose of admitting of the ready adjustment of the rubber in the tub, admits withdrawal therefrom, substantially as set forth.

Also, the combination of the tub A, rubber M, frame J, and the rubber driving mechanism composed of the wheel H, roller I, or equivalent gearing, and the crank *j*, provided with the wrist pin *k*, fitted in the slot *i* of frame J, all arranged to operate substantially as and for the purpose set forth.

No. 51,978.—H. E. STAGER, Milwaukee, Wis.—*Wood-bending Machine.*—January 9, 1866.—The wood is supported at its end by clamps, and fastened at its mid-length between a segment and a set block; it is pressed down upon the "former" by traversing rollers journalled in radial levers.

Claim.—First, levers G G, form B, bending band K, adjustable end pressure blocks M M, and rubber springs N N, combined substantially as and for the purpose described.

Second, bending band K, adjustable end pressure blocks M M, and rubber springs N N, in combination, substanially as and for the purpose described.

No. 51,979.—U. STEWART, Berlin, Wis.—*Device for Forming Horseshoes.*—January 9, 1866.—The contour of the face and the shape of the grooves assist in giving the required conformation to the shoe.

Claim.—The convex and grooved surface anvil A, to be used in the manufacture of horseshoes by hand, substantially as described.

No. 51,980.—WILLIAM W. ST. JOHN, Syracuse, N. Y.—*Drill Head.*—January 9, 1866.—The corrugations winding to the left turn the drill in driving and tighten the joints; the slits are larger on the inside to prevent choking.

Claim.—The hollow drill head provided with apertures, constructed as described, and with external corrugations arranged in the form of a left-hand screw, substantially as set forth.

No. 51,981.—JOEL E. TODD, Middletown, Conn.—*Bed Bottom.*—January 9, 1866.—The coiled springs arranged around vertical spindles on the bed frame support detached disks, upon which the mattress is laid.

Claim.—The combination of the spring with the spindle *a* and disk *c* when the said disk is separate from said spindle, substantially as and for the purpose specified.

No. 51,982.—RICHARD VOSE, New York, N. Y—*Sash Fastener.*—January 9, 1866.—A spring in the edge of the sash engages a rack in the window casing, and is withdrawn by a trigger lever and connecting rod.

Claim.—The construction and arrangement of a hinged or jointed swinging pawl G and spring F, in combination with rack H, rod or chain E, and angular lever A, substantially in the manner and for the purpose herein set forth.

No. 51,983.—GEORGE W. WAREHAM, Dayton, Ohio.—*Sash Fastener.*—January 9, 1866.—The supporting spring catch moves in a socketed plate attached to the window casing, and is withdrawn by a pivoted lever whose lug engages it behind the plate.

Claim.—The arrangement of the plate *a*, the lever *b*, the catch *e*, substantially as described.

No. 51,984.—OWEN G. WARREN, New York, N. Y.—*Suction Drill.*—January 9, 1866; antedated December 26, 1865.—The detritus is withdrawn through the hollow drill stock by a suction fan.

Claim.—Exhausting the comminuted stone and dirt from a well through a pipe in the process of boring, in the manner substantially as above described.

No. 51,985.—ELI WHITNEY, New Haven, Conn.—*Revolving Fire-arms.*—January 9, 1866.—The recoil shield and revolving chambered cylinder are connected by, and move upon, an axial, tubular arbor. The flange of the cartridge is so embraced by the shield as to form an anvil in front in opposition to the hammer and to extract the spent capsule. The hollow arbor is secured at front and rear in the frame of the stock.

Claim.—First, a perforated shield or breech cap, which is provided with flanges that serve as anvils and cartridge extractors, in combination with a hollow tube or spindle passing through the revolving cylinder B, and a locking contrivance which connects the shield and cylinder together in such manner that they will revolve together, substantially as described.

Second, attaching the hollow spindle or tubular axis of the shield or breech cap to the revolving cylinder B, in such manner that in unloading the shield and cylinder will not be detached from each other, substantially as described.

Third, the flanged shield C, in combination with a tubular spindle which is secured to it, substantially as described.

Fourth, a shield C, which combines in its construction ratchet teeth, exploding anvils, and cartridge retractors, in combination with a revolving chambered cylinder, and a locking pin, or its equivalent, substantially as and for the purpose described.

Fifth, so constructing the shield C and applying it to the cylinder B that it will serve as a cartridge extractor and also afford anvils for the explosion of the metallic cartridges, substantially as described.

Sixth, the combination of the flanged shield C revolving cylinder B, tubular spindle K C, and transverse recesses *a a* in the frame A A′, all operating substantially in the manner and for the purpose described.

No. 51,986.—JAMES A. WHITNEY, Maryland, N. Y.—*Horseshoe Nail Machine.*—January 9, 1866.—The nail rod is held in a socket at the end of a crank, which is vibrated to present the rod successively to two sets of swages which fashion the four sides of the nail; the change of presentation and the percussive action are performed by consonant actions of the driving gear.

Claim.—First, the die faces *a*1 *a*2 and *c*1 *c*2, placed opposite each other substantially as shown, and used in connection with any suitable device for turning the nail rod, all substantially as set forth for the purpose specified.

Second, the combination of the holder *a*, chisel *h*, and spring *i*, for gauging the blanks, as described.

Third, cutting the finished nail from the nail rod by means of a knife or chisel attached to the hammer, when done automatically and without stopping the hammer, substantially as herein set forth and shown.

No. 51,987.—J. M. WHITNEY, Boston, Mass.—*Portable Head Rest.*—January 9, 1866.—The cushion is attached to a standard, which is adjustable as to height in a clamp fastened to the back of the seat.

Claim.—First, the combination and arrangement of the said clamp D, wedge C, and cam lever E with the standard A and head rest B.

Second, the combination and arrangement of the adjustable guard E′ with the said clamp D and its lever E, or the same and the wedge C, when applied to a head rest for carriages, as herein mentioned.

Third, the combination of the guard E′, clamp D, and lever E with the standard A and head rest B, the whole being substantially as hereinbefore described.

No. 51,988.—B. G. WILDER and S. WALES, United States army, and WILLIAM NICHOLS, Boston, Mass.—*Mode of Obtaining Silk from Living Spiders and other Silk Producers.*—January 9, 1866.—The arachnidæ are secured upon a frame, their spinnerets being so presented as to yield their webs to be associated and wound upon a spool.

Claim.—First, the drawing and reeling or winding the silk directly from the insect, spider, silk-worm, or other silk producers, as set forth.

Second, the drawing, reeling, and spinning, or twisting together, directly from the bodies of insects, spiders, silk-worms, or other silk producers, two or more strands or threads, as set forth.

No. 51,989.—WILLIAM W. WINTER and STEPHEN BREWER, Cortlandville, N. Y.—*Boring Wells.*—January 9, 1866.—The perforations in the lower portions of the drill tube are covered while driving by a sleeve tube, shod at its lower end, and which slips on the inner tube when the latter is partially raised.

Claim.—The construction of bored or drilled wells in such a manner that the lateral apertures in the lower portion of the pipe or tube shall be closed while the pipe or tube is being sunk into the ground, and readily unclosed or opened when the same has reached its final position in the earth, all substantially as herein shown and described.

No. 51,990.—MARINUS N. ALLEN and JOSEPH ROUSE, Titusville, Penn., and JAMES MELCHER, Waterbury, Conn.—*Packing Pump Pistons.*—January 9, 1866.—The edges of the cylindrical packing are infolded and clamped by screw collars. The packing is expanded by the contained liquid.

Claim.—First, in the described combination with a pump piston, the expanding packing E, confined at its ends in the manner described, so as to avoid any external edge projecting at right angles to the motion of the shaft.

Second, packing the pistons of pumps by means of a cylinder confined both at its upper and lower ends, whose sides are expanded by fluids or liquids let in between it and the enclosed sides of the piston, substantially as described.

No. 51,991.—Hiram Berdan, New York, N. Y., assignor to Berdan Fire-arms Manufacturing Company, same place.—*Breech-loading Fire-arm.*—January 9, 1866.—The bursting of the hollow-flanged head of the cartridge is prevented by a device acting upon the front of the flange and pressing it against the breech, the detonating pin striking at an opposite point. The claim explains the remaining features.

Claim.—First, the employment, in a breech-loading fire-arm, of a device so applied and operated as to press back the cartridge against the face of the breech, preparatory to firing, substantially as and for the purpose herein described.

Second, so applying and operating the cartridge shell retractor of a breech-loading fire-arm that it shall serve the purpose of pressing back the cartridge against the face of the breech, preparatory to firing, substantially as herein specified.

Third, so arranging the detonating pin of a breech-loading fire-arm that it shall strike the back of the head of the cartridge opposite to where it is supported by a movable device which serves the purpose of pressing back the cartridge against the breech, substantially as herein set forth.

Fourth, the elongation of the hole provided in the swinging breech for the reception of the pin upon which it swings, whereby the breech has a direct rear support in the breech receiver at the time of firing, and yet is free to swing back loosely to open the barrel for reloading, substantially as herein set forth.

Fifth, the relative position and arrangement to each other of the hammer, firing pin, swinging breech, and line of bore, by which the line of bore is unobstructed and the loading facilitated when the hammer is at half cock, substantially as herein described.

Sixth, the combination with one main spring of two or more stirrups, one or more connecting the tumbler or hammer, and the other connecting a brace for locking the breech when the hammer is down, substantially as herein set forth.

Seventh, in combination with a swinging breech piece, the employment of a suitable projection on the lower and front side of the brace or tumbler, whereby the loading at full cock is prevented, substantially as and for the purpose herein specified.

Eighth, so constructing and applying a brace to a swinging breech for breech-loading fire-arms, which swings on a tumbler shaft detached from the tumbler, but attached to the main spring, in such a way as to give a greater motion to the brace than is given to the tumbler.

Ninth, so combining a movable brace, which operates to lock the breech at the time of firing, a three-notched tumbler and a swinging breech in a breech-loading fire-arm, that while the hammer is locked by the sear in the first or safety notch, the breech is locked in a closed condition by the said brace, substantially as herein set forth.

Tenth, the combination of the flanges, breech receiver or lock frame A, the pins upon which the hammer, breech, and sear work, and the cheek pieces of the stock, by which the pins are held in place, substantially as herein described and for the purpose herein set forth.

No. 51,992.—A. E. Blood and J. B. Blood, Lynn, Mass., assignors to themselves and E. D. Goodrich, Cambridge, Mass.—*Flour Sifter.*—January 9, 1866.—A lever shod with a pressure roller and elastic scrapers vibrates on an axis coincident with that of the concave sieve.

Claim.—First, the combination of the finely perforated concave or sieve A and levers G G, constructed with oblong slots J J and with a pressure device M, or its equivalent, substantially in the manner and for the purpose described.

Second, arranging the scrapers K and rollers M at the bottom of the levers G G, in oblong slots, or in slots somewhat larger than the ends of said scrapers and rollers, substantially as and for the purpose described.

Third, providing the bottom of the scrapers *k* with a strip of leather or other suitable yielding material, substantially as and for the purpose described.

Fourth, the revolving cylinder or cylinders M, when combined with a sieve and operating with a rolling pressure upon the flour, which is placed upon said sieve to be sifted, substantially as and for the purpose set forth.

Fifth, the arrangement of the deflectors D, in combination with the concave sieve and pressure device G G M, or its equivalents, substantially as and for the purpose set forth.

No. 51,993.—Thomas L. Brown, Cincinnati, Ohio, assignor to George W. Foster, same place.—*Shoe Jack.*—January 9, 1866.—By horizontal and vertical adjustments, which incline it as required, the last is presented in a convenient position for stitching or pegging the work.

Claim.—A last holder provided with two sets of rotary shifting plates A D H I, connected by a tightening bolt F, parallel to both and eyeleted to receive an adjustable tensional cord or thong J, or devices substantially equivalent, connected and operating substantially as set forth.

No. 51,994.—Riley Burditt, Brattleboro', Vt., assignor to Jacob Estey & Co., same place.—*Reed Musical Instrument.*—January 9, 1866.—The triplicate or quadruplicate sets of reeds are arranged in a single socket board to secure an even effect of the air thereon.

Claim.—The improved manner of marking reed boards in instruments of music so that the third and fourth sets of reeds rest on the same base as the first and second sets, all being equally near to the valve.

No. 51,995.—JOHN B. CROWLEY, Cincinnati, Ohio, assignor to himself and CHAMBERLAIN & CO., same place.—*Moulders' Clamp.*—January 9, 1866.—The respective halves of the flask are clamped together by a hooked bar, which reaches under the lower part, and a lever cam resting in a shoe upon the upper part.

Claim.—The use of the shoe D, in connection with the hook B and cam-headed lever C.

No. 51,996.—WILLIAM GOODWIN, Boston, Mass., assignor to himself and WILLIAM H. HOLLAND, same place.—*Rotary Steam Engine.*—January 9, 1866.—Duplicate induction and eduction openings on the respective sides of the gate permit the reversal of the motion by the change of a valve. The gate is moved by cams on the main shaft; a tubular valve worked by tappet wheels admits steam to the cylinder and closes while the piston is passing the gate.

Claim.—The arrangement of the two sets of inlet and outlet ports *a b*, the annular eduction passage L, and the reversing valve N, with the chamber K, the annular cylinder B, the wheel C, piston D, and gate E, the whole being to operate together substantially as hereinbefore specified.

Also, the combination as well as the arrangement of the bevelled tappet wheels U V W, and the main valve P, and its chest O, with the shaft D, and the rotary engine made and applied to such shaft, substantially as above described, the two steam chests O K being connected by a conduit R, as explained.

No. 51,997.—WILLIAM H. HAINES, Newark, N. J., assignor to himself and JOHN MCLORINAN, same place.—*Manufacture of Enamelled Cloth.*—January 9, 1866.—The cloth is treated with varnishes composed as follows: 1. Burnt umber boiled in raw linseed oil. 2. Burnt umber heated in raw linseed oil to 500° Fahrenheit. Mix the two materials into a varnish and apply in the usual manner.

Claim.—As a new article of manufacture, an enamelled cloth, made substantially in the manner described.

No. 51,998.—WILLIAM H. HAINES, Newark, N. J., assignor to himself and JOHN MCLORINAN, same place.—*Varnish for Enamelling Cloth.*—January 9, 1866.—Explained by the claim.

Claim.—A varnish made of two or more substances, or admixture in the nature of a varnish, of an independent and different amount of drying property, so that when admixed and used together the surface of the varnish, when dry, will present a series of crystallizations or corrugations, substantially in the manner and for the purposes described.

No. 51,999.—GEORGE M. HOPKINS, Albion, N. Y., assignor to himself and W. R. SMITH, same place.—*Apparatus for Turning the Leaves of Music.*—January 9, 1866.—A series of arms, with erect fingers interposed between the leaves, are attached to disks, which are rotated by springs as they are consecutively released by a trigger.

Claim.—First, in an apparatus for turning the leaves of music, keeping the fingers which engage the leaves in an erect position by means of springs, which act against eccentrics or cams formed on the fingers at the places where they are pivoted to the swinging arms E, substantially as above described.

Second, the detaining rod F, in combination with the finger D, substantially as shown and described.

Third, the supplementary arm H, with its finger piece I and finger J, by means of which the whole series of arms E can be turned back at once, and the first page or leaf of music can be reopened by means of finger J, substantially as shown and described.

Fourth, the manner, substantially as above shown and described, of applying the springs N to the arms E and arm H, in combination with the means of adjusting said springs, through the agency of rod or pin Q, clamp P, and fulcrum plate O, as above set forth.

Fifth, the lifter or escapement C, applied and operated as shown, in combination with the patch L, substantially as above described.

No. 52,000.—ALEXANDER MACKIE, Philadelphia, Penn., assignor to BORIE & MACKIE, same place.—*Cork-cutting Machine.*—January 9, 1866.—The cork is clamped between the faces of the spindles and advanced to the revolving knife, the diameter of the cork depending upon the proximity of the spindles to the knife governed by a cam plate.

Claim.—First, the sliding plate C C′, with the spindles Q Q′, combined with the within-described devices, or their equivalents, and with the revolving knife X, so that a block of cork will be seized between the two spindles, carried to the knife X, revolved while in contact with the same, and afterwards withdrawn, all substantially as described.

Second, the cam plate M, combined with the sliding plates C C′, and the within-described devices, or their equivalent, for operating said plates, so that the movements of the latter may be regulated, substantially as and for the purpose specified.

Third, the slotted rod L, with its springs *f f*, and sliding block *b*, combined with the wheel G, and its pin *d*, so that the forward movement of the rod may be arrested without interfering with the movement of wheel G, for the purpose specified.

No. 52,001.—JAMES MANDERSON and SAMUEL FAVINGER, Philadelphia, Penn., assignors to JAMES MANDERSON, same place.—*Apparatus for removing Cargoes of Vessels.*—January 9, 1866.—The bucket having nearly reached the required height, a lever is disengaged, which permits the truck to travel. The bucket is tipped by contact with a rod in its path.

Claim.—First, the bucket M and belt *h*, combined with the truck W, and bar *l*, the whole being arranged and operating substantially as and for the purpose herein set forth.

Second, the combination of the truck W, with its lever K and pulley I, the inclined rails *c*, plate D′, belt *h*, and bucket M, the whole being arranged and operating substantially as and for the purpose specified.

No. 52,002.—JAMES H. PARKER, Trenton, N. Y., assignor to himself, JAMES T. HALL and ISAAC PIERCE, Floyd, N. Y.—*Spring for Trusses.*—January 9, 1866.—Explained by the claim.

Claim.—A truss or supporter spring which will become pliable by heat, and adjust itself to the form of the body to which it is applied, said truss or supporter spring being made entirely of vulcanized rubber or gutta-percha, substantially as herein described and set forth.

No. 52,003.—W. ANTHONY SHAW, New York, N. Y., assignor to Self, GARDNER WILLARD, LEWIS COLWELL, and JOSEPH COLWELL, same place.—*Device for Separating Shot.*—January 9, 1866.—The imperfect shot are separated by a series of inclines, with foot troughs, over which the perfect shot are projected by their velocity, to be afterwards assorted in a series of rotary screens of gradually increasing coarseness.

Claim.—First, a series of revolving screens for assorting the shot, in combination with the inclines and receptacles, substantially as specified.

Second, the method herein specified of assorting shot, and delivering the different sizes into receptacles by mechanism, substantially as specified.

Third, the combination of a series of inclines for separating the imperfect shot, as set forth, with a series of screens, for assorting the size of the shot, all constructed and arranged substantially as set forth.

No. 52,004.—JOSEPH SHERMAN, Burlington, N. J., assignor to himself and JOHN T. SEVERNS, same place.—*Shingle.*—January 9, 1866.—Ribs on the upper surface of the shingles prevent the rotting incident to close contact.

Claim.—A shingle having on its upper surface rounded or sharp-edged ribs, arranged longitudinally, as and for the purpose herein set forth.

No. 52,005.—JAMES W. SUTHERLAND, Indianapolis, Ind., assignor to himself, JOHN M. LORD, and SAMUEL C. FRINK, same place.—*Railroad Chair.*—January 9, 1866.—Notches in the base flanges of the adjacent ends of the rails admit the turned up lip of the chair. The rails are imposed upon the base flanges of the chair, and are supported outside by an erect flange which conforms to their shape.

Claim.—A wrought-iron chair constructed in one piece, substantially as set forth, in combination with a rail notched in the manner and for the purpose set forth.

No. 52,006.—JOACHIM JOSEPH DUCOMET, Paris, France.—*Steam Gauge.*—January 9, 1866.—The cap is made of thin metallic sheets of copper and silver, densely rolled, united by heat, and spun in a lathe to the shape required. The pressure of steam in the pliable cap is transmitted by the distension of the latter to a lens-shaped foot, and the motion communicated to the index.

Claim.—First, the metallic cap A, constructed and arranged substantially as and for the purposes described.

Also, the joint of said cap, by which it is securely affixed to its seat, so as to prevent its being torn away therefrom by the internal pressure of the steam, as specified.

Also, the spring *g*, constructed and arranged as herein described, whereby to prevent the friction wear and tiring thereof, so that the pressure of the steam shall be thereby constantly and correctly indicated.

Also, the combination and arrangement of the connecting rod *h*, crank *i*, and spring *l*, to regulate the motion of the hand *k*, as above set forth.

Also, the several parts of the steam gauge included in the above-enumerated claims, and their connections combined, substantially as and for the purposes specified.

No. 52,007.—LEOPOLD KRANS, Mischkolz, and ALEXANDER SZIGETHY, Kashaw, Hungary.—*Cigarette Machine.*—January 9, 1866.—A roll of paper is wrapped around a tube, and its inner end clamped between two short tubes or collars; the tube is filled with tobacco and withdrawn, leaving the tobacco in the paper envelope. A hollow piston maintains the position of the tobacco while the tube is withdrawn, and forms a stem.

Claim.—The combination of the tubes C *x* and *w* with the tube and mouth-piece A and B, when constructed and arranged in the manner and for the purpose substantially as described.

No. 52,008.—EDWARD LORD, Todmorden, England.—*Cleaning Cotton and other Fibrous Substances.*—January 9, 1866.—The bars of the grating, which is placed between the beaters and the wire cage of the blower, are longitudinal. The feeding concave is supported on a centre, and whether consisting of one piece or several, is weighted to deliver the fibres evenly to the licker-in.

Claim.—First, the longitudinal grate bars marked S, in Figs. 1 and 2, forming the grid between the beater and the perforated cylinders of a blower or scutcher, for cleaning cotton and other fibrous substances.

Second, dividing the feeding trough or concave plate over which the fleece of fibres passes to the beater, licker-in, or other revolving drum or roller of machines used in preparing cotton and other fibrous substances, into two or more parts, as described.

Third, supporting the feeding trough or concave plate over which the fleece of fibres passes to the heater, licker-in, or other revolving drum or roller on a fulcrum or centre, and weighing it, whether such feeding trough or concave plate be made in one piece or divided into two or more parts, as described.

No. 52,009.—H. JONES RUTTAN, Coburg, Canada West.—*Apparatus for Ventilating Railroad Cars.*—January 9, 1866.—The inlet and exit air openings are at the ends of the car; the air is forcibly introduced by caps on the roof, presented in the line of motion of the car. It is purified by contact with water, discharged into the saloon at an elevated opening, and educted at orifices near the floor.

Claim.—First, the arrangement of the inlet and exit chambers *b*, *d* and *o*, with the water-tank at the ends of the car, as and for the purpose described.

Second, the combination of the chambers *b d*, divided by a partition, and their lower portion forming a tank, as described.

Third, the mode of withdrawing the impure air by openings in the floor, leading to an upcast shaft delivering above the roof.

Fourth, in combination with the shafts *b d*, the tubular warming stove, arranged substantially as described and represented.

No. 52,010.—JOHN ALDRICH, Lake Village, N. H.—*Aqueduct Coupling.*—January 16, 1866.—The short tube has sharp ends, and a flange in the middle upon the outside, which serves as a hand for driving it into the log, and forms a bearing for the ends of the logs. When it is necessary to have a curved or bent joint, the flange is made thicker on one side than the other.

Claim.—A log or other wooden pipe coupling made of cast metal, with thin or sharp ends and a central outwardly projecting ring or flange B, substantially as and for the purpose herein specified.

No. 52,011.—JOHN B. ATWATER, Chicago, Ill.—*Cattle Pump.*—January 16, 1866.—The cattle, upon entering and leaving the yard, walk across the end of a platform lever and depress it, thus operating a pump, the water from which flows into a trough.

Claim.—First, arranging a stock-pumping aparatus and also a drinking trough within a yard or enclosure, in such manner that the animals, upon entering or leaving such enclosure, will operate the pump and supply the trough with water, substantially as described.

Second, the pumping lever A, having platforms C C applied to one arm, and a weight applied directly to the other arm, substantially as described.

No. 52,012.—WILLIAM BALLARD, New York, N. Y.—*Dentistry.*—January 16, 1866.—Explained by the claim and cut.

Claim.—In the plates of artificial teeth, making grooves A around the central part of the plates, and also transverse grooves A′, near the heel of the plates, for the purpose of making such plates adhere more easily to the mouth, substantially as described.

No. 52,013.—E. H. BARNEY, Springfield, Mass.—*Skate.*—January 16, 1866.—The skate is formed of one width throughout, generally made of steel or iron; the sole or plate is raised at the toe-end by lengthening the brackets by which it is attached to the runner.

Claim.—First, the bracket A, when constructed and used substantially in the manner and for the purpose herein described.

Second, the method of raising the front end of the toe-plate B, by means of the brackets A A′, substantially in the manner set forth.

No. 52,014.—EZEKIEL M. BARTLETT, Louisiana, Mo.—*Specula for Uterine Diseases.*—January 16, 1866.—The series of valves are hinged to a band or ring, in such a manner that an enclosed ring which bears against the ends of the valves, when pushed into the outer ring by means of set-screws, forces apart or expands the valves.

Claim.—First, a series of valves *a*, so hinged to the outer band or collar A, that they may be contracted and expanded at pleasure, all acting together, or any number of them turned over and the remainder only used.

Second, the bands or collars A and B, hinged together as represented, and operated by the

set-screws *b*, so as either to allow the contraction of the valves, or to gently expand them to any required extent at pleasure.

Third, the combination of the plunger valves, bands or collars, hinges, and set-screws, for the purposes intended, and operating as set forth.

No. 52,015.—F. G. BELKNAP, Washoe, Nevada.—*Shoes and Dies for Grinding and Amalgamating Machines.*—January 16, 1866.—The muller is composed of six or eight iron shoes bolted to an iron disk, having grooves placed obliquely toward the centre. The shoes are cut perpendicularly on one side, and are bevelled on the other. The dies are similar in form to the shoes, and are slightly curved on one side toward the point of axis. Spaces are left between the dies in which are placed bars of iron or wood, which fit closely to the curvature of the dies, leaving the grooves on one side perpendicular, and on the other bevelled.

Claim.—Constructing and placing the shoes and dies upon upper and nether disks, obliquely at about the angle as described, together with the bevelled bars B B B, &c., substantially as described and for the purposes set forth.

No. 52,016.—H. M. BIDWELL, New Haven, Conn.—*Bow Irons for Carriages.*—January 16, 1866.—This invention relates to the construction of that part of a carriage top called the "bow iron," or the joint to which the several bows are secured, and it consists in forming each bow independently of the others. The several branches are attached to a plate which is made in two parts, in one of which is formed a recess to receive the several bows, so that when the two parts of the plate are fitted together, a groove will be left in the upper edge of the plate corresponding to the thickness of the irons to be placed therein.

Claim.—The bow iron constructed substantially in the manner as herein set forth.

No. 52,017.—MAJOR E. BISHOP, Southboro', Mass.—*Spike Extractor.*—January 16, 1866.—The long bar of metal is curved at one end and there formed with two claws, and a spike receiving space arranged between them. Near the claws two fulcrum bearers are hinged to the bar, made to embrace the bar on two of its opposite sides, and to receive a screw bolt extending through the bar. Each bearer of the series should be longer than that in advance of it.

Claim.—The combination and arrangement of two or more bearers B C, of different lengths, with the clawed bar A, the whole being applied together and so as to operate in manner as set forth.

Also, the combination and arrangement of the stop D, with the bearer C, and the clawed bar A.

Also, the combination and arrangement of the spring catch E, with the bearer C, and the clawed bar, as described.

Also, the combination of the retainer F, and its screw G, or the equivalent thereof, with the bar A, and one or more bearers B C, applied to such bar, as specified.

No. 52,018.—CHARLES D. BLINN, Port Huron, Mich.—*Window Shade.*—January 16, 1866.—Explained by the claim and cut.

Claim.—A window shade made of slats connected to each other, edge to edge, by means of cords woven through and about them, notching the edges of the slats where the cords cross them, so as to compel the slats to lap each other and make an opaque shade, substantially as described.

No. 52,019.—JOS. A. BLOOM, Philadelphia, Penn.—*Pump for Deep Wells.*—January 16, 1866.—A smooth-bored cylinder is divided by a transverse plate into two equal compartments. Through this plate passes the piston rod, air-tight, carrying a piston in each section of the cylinder, both sustaining the same position relatively to their respective chambers. The lower pump thus formed, elevates liquid from the well; the upper, through an auxiliary pipe, forces air into the main pipe, at or near its lower extremity. A coiled wire, near the lower valve, connected with a wire leading to a galvanic battery on the surface, is designed to prevent the cracking of the valve and the ignition of the gases.

Claim.—First, the construction and arrangement of the hydraulic and pneumatic pump chambers I and I I in one cylinder, by means of the division plate B, affording a steady guide to both pistons E and E, in combination with the air-conducting pipe F and well tubing D, as shown, and substantially as described, together with system of valves.

Second, the construction and arrangement of the hollow metal chamber *w* on top of the bottom piece O, enclosing, hermetically, a wire coil, connected with any galvanic apparatus on the surface, for the purpose and substantially as described.

No. 52,020.—FREDERICK BOEGER, Philadelphia, Penn.—*Sofa Bedstead.*—January 16, 1866.—Explained by the claim and cut.

Claim.—The extensible platform with its adjustable hinged head and foot frames *c c'*, when constructed and arranged to operate in combination with a sofa frame A B, having a fixed back and ends, and a fixed platform *a'*, substantially as and for the purposes described.

No. 52,021.—Nelson Bowker, New York, N. Y.—*Water Wheel.*—January 16, 1866.—Hot air is admitted into the hollow shaft, and is thence conveyed through the pipes to the casing beneath the buckets; a hollow frame in front of the wheel, serving as an apron, is also charged with hot air. As each bucket passes under the chute, a lever following it throws the bucket open to close again in ascending.

Claim.—The bucket boards B, in combination with the levers J I.

Also, supplying the chambers in the wheel and breast with heat, substantially as and for the purpose described.

No. 52,022.—Abram L. Brink, Warren, Ill.—*Sugar Evaporator.*—January 16, 1866.—The furnace has flues, upon which is placed an evaporating pan having compartments; over the grate is placed a heating vessel, through which the smoke pipes pass. The apparatus is strengthened by rockers.

Claim.—The combination of the central and side compartments C D D, with the corresponding central and side flues A B B, arranged substantially in the manner and for the purposes set forth.

Also, the extension of the compartments C, beyond the sides of the central flue and over the hollow partitions H H, substantially as and for the purposes described.

Also, in combination with a furnace consisting of the central flue A and side flues B B, the transverse supporting rockers F, as a means of strengthening and sustaining the side divisions of the apparatus and readily adjusting the level of the pan, substantially as set forth.

Also, the hollow supporting partitions H H between the central and side flues, in combination with the central compartments C, constructed and arranged as set forth.

No. 52,023.—Joseph Brakeley, Philadelphia, Penn.—*Vessel for Petroleum.*—January 16, 1866.—Through the solid wood of the vessel or barrel are formed passages for the reception of water of a deliquescent salt, in order that the wood may be constantly moist.

Claim.—First, a barrel or other vessel, in the solid wood composing which passages are formed, substantially as and for the purpose herein set forth.

Second, in combination with the above, the use of an hydroscopic agent, substantially in the manner and for the purpose specified.

No. 52,024.—Felix Brown, New York, N. Y.—*Oscillating Engine.*—January 16, 1866.—Combined with an oscillating cylinder is a flat reciprocating valve supported by and held in contact with its seat by a parallel motion in such a manner, that notwithstanding the oscillating motion of the cylinder and valve seat, the flat valve will be constantly held in close contact with its seat; to insure which, the support for the valve is made yielding by means of springs.

Claim.—First, the arrangement of a flat seat on an oscillating cylinder to operate in connection with a flat open slide valve, substantially as set forth.

Second, the rocking fork *h* and links *k*, in combination with the valve *g* and oscillating cylinder A, constructed and operating substantially as and for the purpose described.

Third, the spring bar *j*, in combination with the fork *h*, valve *g*, and oscillating cylinder A, constructed and operating substantially as and for the purpose set forth.

Fourth, the rollers *c* and travelling plates *e*, in combination with the trunnions of an oscillating cylinder, constructed and operating substantially as and for the purpose described.

No. 52,025.—V. W. Brown, Camden, N. J., and D. Frankish, Philadelphia, Penn.—*Lamp Chimney.*—January 16, 1866.—One portion of the chimney is made semi-opaque, and the other portion transparent, so that when the lamp is used as a night lamp, the opaque side of the chimney will partially obstruct the rays of light and allow the frame to be elevated sufficiently to prevent it from being too readily extinguished. The chimney is also made flattened or depressed, and translucent on one side, so that the portion thus depressed may act as a reflector to distribute the rays of light.

Claim.—First, a lamp chimney, one portion of which is transparent and the other semi-opaque, for the purpose specified.

Second, the chimney A, having a portion at X flattened or depressed and made translucent for the purpose set forth.

No. 52,026.—Caleb Cadwell, Waukegan, Ill.—*Harvester.*—January 16, 1866.—This invention has reference to the grain platform and its construction; the means for supporting and adjusting the same, and to the devices employed for removing the grain therefrom, which devices consist of a branching chain, working in grooves around a series of pulleys in a slotted double platform, and having hinged teeth, working through slots in the platform, and having the branches so united as to be operated by a single vibrating lever, connected to a crank arm on the main drive-wheel axle.

Claim.—First, the raking devices consisting of the branching chain O′ and the fingers or hooks N, in combination with the platform H, formed with the grooves *h*, and otherwise constructed as herein described.

Second, in combination with the chain O′ and fingers or hooks N, the lever S, connecting rod V, links V′ V′ and crank W, arranged and employed substantially as and for the purpose specified.

Third, in combination with the above parts, the clutches X X′, claw Y, lever Z, link *a* and foot bar *b*, arranged and operating substantially as herein described.

Fourth, the pivoted plate *e e2* and flange *e′*, in combination with the finger or hook N, for the purpose explained.

Fifth, the arrangement of standards and braces herein shown and described, for supporting the reel.

Sixth, elevating the grain platform by means of the frame B, bail *g* and lever *j*, when the parts are arranged as herein shown and described.

Seventh, the platform H, constructed with top and bottom plates, the hinged side and end pieces, and the angle brace, substantially as described.

Eighth, the wheel or series of rollers *d*, when constructed, arranged, and operating as herein described.

No. 52,027.—Caleb Cadwell, Waukegan, Ill.—*Harvester.*—January 16, 1866.—The peculiar construction of the pitman or connecting rod is designed to overcome the jar or strain consequent upon its rapid vibration; it also consists in a specific arrangement of gearing, &c.

Claim.—First, the combination of the yielding bearing of the pitman rod J, with the spring K′ and set screw K, all constructed and arranged to operate in the manner and for the purpose herein described.

Second, the arrangement of the wheel F with the groove *f*, in combination with the vibrating lever H and the thimble *h4*, substantially as described.

Third, the cog wheel C formed with two sets of cogs C′ C′, to adapt it to impart different degrees of speed to the pinion D and cutter bar, as described.

No. 52,028.—Jacob C. Carncross, Philadelphia, Penn.—*Railroad Snow Plough.*—January 16, 1866.—Explained by the claim and cut.

Claim.—First, combining the ploughs E N with the axles D D′, by means of the swinging frames F, substantially in the manner and for the purpose described.

Second, the combination and arrangement of the springs I and rods or chains J, with the ploughs E N and truck A, substantially in the manner and for the purpose above set forth.

Third, the combination of the shoes L, with the ploughs E N, substantially as and for the purpose set forth.

Fourth, the combination of the wings M with the ploughs E N, substantially as described and for the purpose specified.

Fifth, constructing the plough N with the scoop O, substantially in the manner described and for the purpose set forth.

No. 52,029.—James Christy, Philadelphia, Penn.—*Axle Box.*—January 16, 1866.—The stop or projection fits into an opening in the top of the box, and is arranged, in respect to the key, so as to prevent the displacement of the latter.

Claim.—First, the stop or projection *d*, fitting into an opening in the top of the box, and arranged in respect to the key E, substantially as and for the purpose herein set forth.

Second, the combination of the lid F, fitted to the front of the box and combined with the projection or stop *d*, substantially as described.

Third, the combination of the lid F, spring catch G, and projection *e*, on the box.

No. 52,030.—N. B. Clabaugh, Frederick, Md.—*Washing Machine.*—January 16, 1866.—A series of segmental corrugated slats are applied to segmental heads in such a manner as to form an oscillating rubber, having eccentric rubbing and beating surfaces. The rubber is combined with a concave, having corrugated and stepped surfaces, and arranged within a tub so as to allow water to circulate freely around and through it.

Claim.—First, the combination of a series of corrugated segmental slats *c c c*, with an oscillating rubber, which is arranged to work within a concave G, which is composed of a series of eccentrically curved and corrugated slats, substantially as described.

Second, the combination of an oscillating rubber, which is supported by means of pivoted arms B B, with the loaded levers C C, substantially as described.

No. 52,031.—Isaac Clark, Brooklyn, N. Y.—*Lamp.*—January 16, 1866.—The two plates, operated by ratchet wheels, control the size of the flame.

Claim.—The movable flaps *f f*, lugs *a a*, and gear wheels *d d*, operated by crank G, for the purposes and uses substantially set forth in specification.

No. 52,032.—Samuel P. Clayton, South Amboy, N. J.—*Medical Compound.*—January 16, 1866.—This invention consists of a composition of Cayenne pepper, alum, and persimmon bark, a new and useful composition for preventing and curing the disorder of sweating feet.

Claim.—The composition above described, compounded of the ingredients mentioned, or of their known equivalents, substantially as and for the purpose herein set forth.

No. 52,033.—J. D. CONNER, Bloomington, Ill.—*Coal Stove.*—January 16, 1866.—In this invention, over the fire-pot is an air-mixing chamber, consisting of two concentric domes, the receiver perforated, and the outer imperforate; around its lower edges is a perforated diaphragm, which has double flanges holding in place the two parts of the shell of the stove.

Claim.—The combination of the mixing chamber I J, consisting of two concentric domes, the inner perforated diaphragm P, double flange N, and shells A1 A2, all constructed and arranged as and for the purpose set forth.

No. 52,034.—E. N. CUMMINGS, Colebrook, N. H.—*Fly Trap.*—January 16, 1866.—In this invention a horizontally revolving turn-table, driven by clock-work, and provided with radial ribs or ledges, on passing under a wire gauze chamber placed over one side of said table, causes the flies to be swept off by a stationary brush-like valve into the said chamber.

Claim.—The arrangement and combination of the stopping brush *e* with the opening *b*, the entrapping box C, the disk and its radial ribs, arranged as set forth.

Also, the above-described arrangement or application of the partitions *d* and gate or valve *c*, with the opening leading into the entrapping box, and with the rotary disk, provided with radial ribs, as specified.

No. 52,035.—HARRISON DOOLITTLE, East Cleveland, Ohio.—*Washing Machine.*—January 16, 1866.—This invention will be fully understood by reference to the claim and engravings.

Claim.—First, the arrangement of the open removable reel J, removable arbor C, adjustable stud-shaft E, and removable and adjustable pressure roller N.

Second, the arrangement of cheeks H H′ and gaskets G G′ for the prevention of leakage around the arbor and stud-shaft E.

No. 52,036.—ADAM EXTON, Trenton, N. J.—*Apparatus for Making Scroll Biscuit.*—January 16, 1866.—The object of this invention is to facilitate the making of scroll biscuits. It consists in the construction of a former, made of wood or other suitable material. the face or upper surface of which is grooved to receive rolls of biscuits, the grooves being separated one from the other by ridges which are left between them.

Claim.—First, the former above described, for preparing scroll biscuit for the oven, constructed with grooves, separated from each other by ridges or raised spaces, and operated substantially as set forth.

Second, making a series of marks or depressions across the tops of the ridges at right angles with them, and at such distances as shall equal the length of the divisions of the biscuit, substantially as and for the purpose above set forth.

No. 52,037.—CHARLES LOUIS FLEISCHMANN, New York, N. Y.—*Cotton Gin.*—January 16, 1866.—This invention, in separating fibres of cotton from the seeds by means of a series of hooks set in a bar or hook carrier, worked by cranks in a manner that each hook describes a circle, part of a circle or curve in passing through the cotton, carrying the fibres between bars, where they are separated from the seeds and taken below the bars, where brushes, or their equivalents, strip it from the hooks, while they ascend again into the cotton.

Claim.—Separating fibres of cotton from the seeds by means of a series of hooks arranged on a bar, both ends of which describe circles or parts of circles, or equivalent curved paths, in combination with bars, or the equivalent thereof, to form a space between which the hooks are made to rise to get hold of the fibres, and then to descend to strip the fibres from the seeds, substantially as described; also, in combination with the hooks, having a mode of operation substantially as described, brushes, or their equivalents, for stripping the fibres from the hooks as they rise to get a fresh supply of fibres, substantially as described.

No. 52,038.—HORACE N. FOSTER, East Greenwich, R. I.—*Steam Trap.*—January 16, 1866.—This invention is designed to relieve steam-pipes from the water of condensation of steam, and consists in the combination of two springs, a valve, and cross-piece, a lever, with its slot, in combination with an arrangement of rods.

Claim.—First, the combination of the two springs *g* and *c* with the valve *a* and cross-piece *o*, substantially as described and arranged and for the purposes set forth.

Second, the lever D, having a slot, as set forth, in combination with the rods C and *s s*, arranged substantially as described and for the purpose set forth.

No. 52,039.—JOHN A. GEER, Hadlyme, Conn.—*Sawing Machine.*—January 16, 1866; antedated January 10, 1866.—This invention relates to a new and improved sawing machine, designed for sawing curved wood, such as fellies, wheels, and other articles which are in the form of portions of circles. The object of the invention is to obtain a simple device for the purpose specified, which will operate with but little friction, and will admit of being manipulated by an attendant with the greatest facility.

Claim.—First, the combination of the adjustable pivoted arms or bars S, socket U, slide V, and clamp or dog T, arranged and operating in the manner described, and employed to feed the stuff to the saws H H′, in the arc of a circle, and for the purpose explained.

Second, the arrangement of the arms *e f* in connection with the gearing *b c d g* and shafts I L, substantially as and for the purposes specified.

No. 52,040.—CHARLES H. GOLDING, Virginia, Nevada.—*Composition for Coating Amalgamating Pans, &c.*—January 16, 1866.—This invention consists of a composition of four parts of quartz, five parts of red lead, and one part of borax. The mixture is made into a paste with water, and applied to the surface of the pan, then heated to a red heat and allowed to cool.

Claim.—Mixing the above-named ingredients in about the proportion stated, and subjecting the same to heat, to form a new and useful composition of matter for various purposes.

No. 52,041.—MAYER GOOTMANN, New York, N. Y.—*Billiard Indicator.*—January 16, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The arrangement of the registering balls D and E upon circular or arched slides or rods, whose lower ends are fastened in the lower part of the frame, in combination with the loose rings *v v′* and *r r′*, situated at the ends of said slides or rods *n* and *m*, and acting upon or connected with levers G and H of a registering apparatus, respectively, in the manner and for the purpose substantially as described.

No. 52,042.—J. PARKER GORDON, West Garland, Me.—*Bit-holders for Braces.*—January 16, 1866.—This invention consists in cutting a screw on the horizontal part of the brace, on which works a nut, and bearing upon a winged clutch, the wings of which take hold of notches in the bit when the nut is turned up, thus firmly holding the bit in its socket.

Claim.—A bit-holder for a brace, consisting of the sliding winged clutch B, nut D, working on the horizontal screw thread *a*, when arranged to hold the bit in socket A, substantially in the manner described.

No. 52,043.—EPHRAIM HAMBUJER, New York, N. Y.—*Passenger Register.*—January 16, 1866.—This invention consists of a sort of turn-stile, to be placed in a ferry or other passage-way through which passengers must walk, the vertical rod of which communicates its number of revolutions by means of bevel gear to an apron, printed with the cardinal numbers in regular series, thus indicating the regular number of passengers who have passed the stile.

Claim.—The apron or strip I, extending over drums H J, in combination with the vertical arbor B and radiating arms D, constructed and operating substantially as and for the purpose set forth.

No. 52,044.—FRANK HOFFMAN, West Cambridge, Mass.—*Machine for Polishing Wood.*—January 16, 1866.—This invention consists of a machine, having a reciprocating plane or polisher, which can be oscillated laterally or tilted to accommodate the surface being polished, which is brought in contact with the polisher by means of a treadle in connection with balance weights, cords, and pulleys.

Claim.—The combination, as well as the arrangement, of the supporting bar F, and the mechanism—that is, the rods H H and cranked wheels C C for moving the said bar and the plane stock over the bed, with the plane stock K, and the weighted box R, the two bars P Q, their cords *e e h h*, and the sustaining pulleys thereof, the whole being substantially as and for the purpose or purposes as hereinbefore set forth.

No. 52,045.—GEORGE W. HOLMES, Bridgewater, Mass.—*Windlass.*—January 16, 1866.—On the shaft of the windlass is affixed a ratchet, and also a friction wheel, the rim of which projects on one side of the body of the wheel. The said ratchet and friction wheel are arranged within a case, which turns freely on the windlass shaft, and has a ratchet fastened on its rear side. The case carries a crank, which turns on a pin extending through the case, and has an arm projecting from it, a part of which arm constitutes a brake to act against the inner surface of the rim of the friction wheel.

Claim.—Improved arrangement of the friction wheel B, the brake *f*, the crank E, the tooth *g*, and the ratchet *b*, as described, the whole being applied to a case, or its equivalent, and to a windlass A, and to operate substantially as specified.

Also, the combination of the auxiliary pawl *e* and ratchet *d* with the windlass A, the case *c*, the crank E, the brake *f*, the tooth *g*, and the ratchet *b*, the whole being to operate substantially as described.

No. 52,046.—NILS R. HOLMQUEST, Sweden, now residing at Boston, Mass.—*Composition for Filling Wood.*—January 16, 1866.—This invention consists of a composition of linseed oil, flour paste, white vitriol, litharge, and carbonate of lime.

Claim.—The said composition, made of the ingredients and in the manner and for the purpose substantially as described.

No. 52,047.—E. E. HOPKINS, Philadelphia, Penn.—*Water Cooler.*—January 16, 1866.—This invention will be clearly understood by reference to the claim and engraving.

Claim.—A water cooler, composed of an outer casing A, an inner casing *c*, a reservoir B, and a pipe K, the latter being combined with the carriage and forming an inverted syphon, as and for the purpose described.

No. 52,048.—L. B. HUBBELL, Alton, Ill.—*Gearing for Threshing Machine.*—January 16, 1866.—This invention consists in placing the bevel wheel shaft in an adjustable frame, and so arranging the shafts in said frame that the gears may always be kept in line with each other.

Claim.—First, the placing of the shaft E′ in an adjustable frame F, arranged and applied to the framing of the threshing machine in such a manner that the bevel wheel D may be adjusted in a proper relative position with the wheel B, to compensate for the wear of the bearings of the shaft C E′ of the threshing cylinder and the wheel D, as set forth.

Second, the set screws L and cylinder M, arranged relatively with the bearing of the shaft E′ to admit of the longitudinal adjustment of said shaft, and the keeping of the wheels B D in gear with each other, substantially as described.

No. 52,049.—G. L. HUTCHINSON, White Rock, Ill.—*Cultivator.*—January 16, 1866.—This invention consists in a combination of devices, by means of which the plough standards may be raised and lowered at pleasure, and the two centre standards be moved laterally when desired.

Claim.—First, the rock shaft *h′*, arms *h*, and standards *b′*, in combination with the axletrees B and adjustable braces *b e*, when arranged as and for the purpose set forth.

Second, the arrangement of the lever P and adjustable tongue D in combination with the frame A and axletrees B, when hinged together, as and for the purpose described.

No. 52,050.—F. A. and A. J. ILLINGWORTH, Weston, Mass.—*Door Fastening.*—January 16, 1866.—In this invention a short metal bar has an oblong slot made longitudinally in it, and also a stud which is made longitudinally from one end of the bar; a claw of the device which is composed of a plate having a slot made longitudinally in it to receive the bar; a rod passes through the plate and through the slot in the bar for the purpose of securing the claw and allow it to turn freely; the upper end of the claw is provided with two spurs projecting from it at right angles.

Claim.—A portable door fastening, composed of the slotted bar A and the adjustable claw B, constructed and arranged substantially in the manner as and for the purpose herein set forth.

No. 52,051.—ALBERT JACKSON, Clifton Springs, N. Y.—*Fence.*—January 16, 1866.—This invention consists in connecting the panels of a portable fence by means of rods passing through one series of the panels and secured to the base: the other series being placed between said rods and panels, the rods serving as posts. By this arrangement the fence can be taken down and put up at pleasure.

Claim.—The panels A, constructed of horizontal parallel bars *a*, with rods or sticks *b* passing vertically through or otherwise attached to them, in combination with the bars or slats B, all being arranged as shown to admit of the ends of the bars or slats being fitted between the rods or sticks *b*, substantially as set forth.

No. 52,052.—H. P. JONES, Davenport, Iowa.—*Washing Machine.*—January 16, 1866.—The object of this invention is to provide for increasing or diminishing the space between the pressing head or dasher and the washboard of a washing machine, so that the machine may be adapted to receive and wash large or small quantities of articles at the pleasure of the attendant.

Claim.—First, the combination of the loose roller *a*2 and its slotted bearings *d′* with a pivoted washboard, substantially as described.

Second, the construction of the adjustable washboard substantially in the manner represented and herein described, in combination with the vibrating presser G, constructed substantially as described, all applied and operating for the purpose and in the manner set forth.

Third, the segment groove *d* with radial branches *d′ d′*, for the purpose described.

No. 52,053.—BENJAMIN F. KESSLER, Wilmington, Ill.—*Cultivator.*—January 16, 1866.—This invention relates to the arrangement of devices for elevating and retaining the cultivator teeth above the ground when not in use, and consists of a shaft with pulleys, cord, and sustaining trigger, being simply an arrangement of parts or specific devices, as set forth.

Claim.—Elevating and sustaining the beams E by means of the chains *m*, drums L, roller K, wheel J, cord *b*, and slide *m*, when all arranged and operated substantially as described.

No. 52,054.—JEROME KIDDER, New York, N. Y.—*Induction Coil.*—January 16, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—First, arranging the fine insulated wire which composes the helix or helices used

upon a magnet for obtaining an induced current or currents, either wholly or in greater quantity, at or near the centre of the length of the magnet, or what is termed its neutral portion, in combination with the arrangement of the inner or primary coil S and its core of soft iron G, substantially as and for the purpose specified,

Second, making the said helix or helices adjustable upon the magnet between the poles and the so-called neutral portion thereof, for the purpose of varying the power of the induced current or currents, substantially as described.

No. 52,055.—GEORGE KUMP, Xenia, Ohio.—*Lasting Pincers.*—January 16, 1866.—This invention consists of two pairs of jaws connected together and operated by a screw and toggles.

Claim.—The two pairs of jaws A A G G, in combination with the screw D, toggles B F, nut C, and plate E, all arranged substantially in the manner as and for the purpose herein set forth.

No. 52,056.—EBENEZER G. LAMPSON, Windsor, Vt.—*Auger.*—January 16, 1866.—This invention consists in depressing the base of the tug screw beyond the lower line of the lower curve of the floor lips, so as to allow the lower part of the auger to cut through the block before the centre, and have the tug screw serve its office until the hole is bored through.

Claim.—Constructing twisted augers having curved cutting edges with the base of the tug screw depressed into the twisted pod beyond the line of the cutting edges of the floor lips at their lowest line of cut, substantially as described.

No. 52,057.—LEONHARD LEGRAN, Alleghany City, Penn.—*Artificial Legs.*—January 16 1866.—This invention consists in the method of arranging a series of devices designated in the claim for the purpose of readily adjusting the leg to the body, and imparting a natural, movement to the same.

Claim.—The arrangement of the suspenders A A′ and B B′, straps D and C, cords *d e* and *f*, cross-pieces 1 and 2, hinge S, screw 5, nut 6, spring *m*. rod *o*, gum *u*, and hinge *r*, when used in connection with the foot *c* and the parts *b* and *a* of the leg, the whole being constructed, arranged, and operating substantially as herein described and for the purpose set forth.

No. 52,058.—C. THEODORE LIEBOLD, New York, N. Y.—*Harness Bells.*—January 16, 1866.—This invention consists in fixing the sleigh bells opposite each other so that two form a globe cut in two, leaving a small space free between themselves.

Claim.—The fixation of the bell shells opposite each other so that two form a globe cut in two, leaving a small space free between themselves, securing thereby the richest tune and greatest beauty of form possible.

No. 52,059.—JOSEPH F. LIGHT, Worcester, Mass.—*Shipper Device.*—January 16, 1866 — This invention consists in the combination of a slotted piece, slide sleeve, slide rod; it consists of a piece cast with a socket in its lower end to receive the lever, having a ball at the other end in combination with pieces for sustaining the same.

Claim.—First, the piece B, cast with a socket in its lower end to receive the lever, and having a ball *b* at the other end, in combination with the pieces G and F for sustaining the same, substantially as set forth.

Second, the combination with the pieces G and F of the flange *c*, for the purposes set forth.

Third, the combination with the slotted piece B of the slide sleeve D and slide rod E, substantially as set forth.

No. 52,060.—RICHARD W. LISCOMB, Smithfield, Penn.—*Horse Hay Fork.*—January 16, 1866.—This invention consists in the use of a brace, one end of which is hinged to the handle and the other is attached to the hoisting rope, which is attached directly to the fork-head; said brace being for the purpose of preventing the tilting of the fork while being raised.

Claim.—The brace F, applied to the arm or handle B and to the hoisting rope G, to operate in the manner substantially as and for the purpose herein set forth.

No. 52,061.—JOHN L. LIVINGSTON, Mount Carroll, Ill.—*Lime Kiln.*—January 16, 1866.—This invention consists in a double passage or feed-way from one entrance to two furnaces; further, in the combination of two sunken grates with straight-sided walls of the furnace; finally, as a separation between the shaft and cooler of a lime kiln a cut-off slide, having a cog rack on its bottom and a gauge flange on its top.

Claim.—First, a double passage or feed way P P from the one entrance B to the two furnaces *m m*, substantially as and for the purpose specified and delineated.

Second, the combination of the two sunken grates *a a* with the straight-sided walls R R of the furnace, the whole so arranged that one or more layers of wood will fall into the furnaces before full, and so that the wood comes in contact with the walls of the furnaces their whole length, and therefore heats equally, substantially as described.

Third, as a separative between the shaft and cooler of a lime kiln the cut-off slide A, having a cog rack on its bottom and a gauge flange *k* on its top, when employed in combination with the frame *z*, shaft and pinion I, and friction roller or bearing H, substantially as specified.

No. 52,062.—JOHN C. LOVELAND, Springfield, Vt.—*Dough Kneader.*—January 16, 1866.—This invention consists in combining a pair of rollers, one corrugated lengthwise and the other transversely, working in a frame with two inclined boards and a disk below the lower roller propelled by a crank, and the rollers geared together by elastic cross-bands.

Claim.—First, the combination of the rollers B and D, constructed as described with each other and with the frame A, substantially as described and for the purpose set forth.

Second, the combination of the inclined aprons or tables K, with the rollers B and D, and with the frame or support A, substantially as and for the purpose set forth.

Third, the combination of the disk M with the roller B, the aprons K, and the supports A, substantially as described and for the purpose set forth.

No. 52,063.—GEORGE F. LYNCH, Milwaukee, Wis.—*Car Brake.*—January 16, 1866.—This invention consists in the connection of car bumpers with the draws of a brake in such a manner that the contactof such bumper with an adjoining car bumper will operate the brakes.

Claim.—Connecting the brakes of railroad cars with their own bumpers, respectively, in such a manner that each car of a train of cars in motion shall automatically apply its own brakes by means of the force of its momentum, operating upon and through its forward bumper for the time being whenever that bumper is brought in contact and impact with a bumper or other part or appendage of the preceding car, tender, or locomotive, substantially as herein described, employing for that purpose the aforesaid means of connection between the brakes and bumpers.

No. 52,064.—J. K. MIZNER, Detroit, Mich.—*Cavalry Accoutrements.*—January 16, 1866.—This invention consists in making the haversack, which is carried on the shoulders, a counterpoise for the cartridge-boxes, which are worn on the front of the belt; also, in the divisional haversack, the upper portion of which is occupied by boxes to contain three days' meat, coffee, sugar, and salt, in separate cases, the lower or bag-like portion being adapted to contain an equivalent quantity of bread. A strap passing along the bottom and up one end of the cartridge-box affords the means for elevating the packages of cartridges, which fit closely therein, and are difficult of removal by the fingers.

Claim.—First, the arrangement of the haversack P, the cartridge-boxes D, the belt A, and forked strap G G G, substantially as described.

Second, the divisional haversack, consisting of an upper portion occupied by boxes and a lower sack-like portion appended thereto, arranged and enclosed substantially in the manner and for the purpose described.

Third, the strap N, as applied to the cartridge-boxes in the manner and for the purpose described.

No. 52,065.—JOEL MOULTON, Boston, Mass.—*Pipe Tongs.*—January 16, 1866.—This invention consists in a shank secured to a movable jaw, and is made to slide loosely with respect to a stationary jaw, and is held in place to grasp the pipe or other article, by a lever or handle, extending from the shank of the fixed jaw, and turning on a fulcrum pin, one face of the lever opposite the fulcrum being made eccentric to the pin, and in such manner that when the handle is turned outward from the handle of the movable jaw, said movable jaw may slide freely, while, when it is brought up to the handle of the movable jaw the eccentric face bites upon and holds the shank of the movable jaw in fixed position with respect to the stationary one.

Claim.—The construction of the tongs or wrench with a fixed jaw and shank *e*, sliding shank *f*, and lever *i*, having a griping face, and operating substantially as set forth.

No. 52,066.—JAMES O'DONALD, Clinton, Ill.—*Churn.*—January 16, 1866.—This invention consists in attaching to the dasher shaft two or more slats at an angle in such a manner as to throw the cream in a stream in and out from the centre, as the lever is operated from one side to the other.

Claim.—The construction of the dasher, with two or more slats attached thereto, and standing at an angle with the dasher shaft, so as in their revolution to whirl the cream inwardly or outwardly, according to the direction in which they are rotated, substantially as described.

No. 52,067.—WILLIAM OGDEN, Philadelphia, Penn.—*Insect Trap.*—January 16, 1866.—This invention consists of a lantern having glass sides, and a reservoir containing liquid fatal to insect life, into which liquid the insects fall, after fluttering against the glass, or into which they are precipitated by inclined glass plates, in endeavoring to fly from the lantern.

Claim.—First, the combination, substantially as described, of a lantern of any desired form, with a reservoir C, for the purpose specified.

Second, in combination with the above, the inclined plates D of glass, for the purpose set forth.

No. 52,068.—G. ADAM OHL, Newark, N. J.—*Expanding Tap.*—January 16, 1866.—This invention consists in inserting the cutters in inclined dovetail grooves in the sides of the stock,

and connecting them by screws to a plug, sliding in a hole bored in the centre of said stock, by means of a screw, the shank of said screw being secured to the end of the stock by collars.

Claim.—The peculiar form of shank, and the arrangement of moving the cutters C, by means of the internal screw E and nut N, or by any similar device.

Also, the combination of the several parts described in specifications and engravings.

No. 52,069.—AUGUSTUS J. OHMER, Hamilton, Ohio.—*Portable Soda Fountain.*—January 16, 1866.—This invention consists in providing the portable fountain with a refrigerator for containing ice, the draught tube of said fountain being made to pass through said refrigerator in the form of a coil.

Claim.—Combining with a portable refreshment fountain the refrigerator B, traversed by the discharge-pipe C, in the manner substantially as set forth.

No. 52,070.—A. N. PARKHURST, Peoria, Ill.—*Pump.*—January 16, 1866.—This invention is designed to secure the porcelain chamber for the sucker in wooden pumps always in place, without liability to break, and to facilitate the removal of one or more sections of the pump from the well, or hold them all securely when in position; for the first purpose, a wooden washer, turned and reamed, so that the direction of the grain shall be in line with that of the pipes, is nicely fitted to hold the porcelain, glass, or other fragile valve chamber in place, so that the contraction and expansion throughout the section in which the valve is situated will be uniform; and for the second purpose, metallic screw rods are used, with suitable brackets attached to the sections, and thus, by merely detaching the screws, one or more sections can be renewed: or, when all the sections are in place, they can be held firmly together by the rod and brackets, as if made of a single piece of lumber.

Claim.—First, securing glass, porcelain, or vitrified valve chambers in wooden pumps by wooden rings or washers, arranged and operating substantially in the manner described.

Second, in combination with the foregoing, forming and securing the connections of wooden pipes for pumps with stay rods of metal, arranged and operating substantially in the manner described.

No. 52,071.—E. C. PATTERSON, Chicago, Ill.—*Grain Separator.*—January 16, 1866.—This invention consists, first, in a saw-shaped agitator for regulating the flow of grain from the hopper upon the separating sieve, whereby a free and uniform flow of grain is maintained, and all liability of the discharge aperture of said hopper clogging up is prevented; second, in a hinged apron for conducting off oats and sticks from the first grain sieve, which apron is so applied to the sieve, shoe, or shaker, that it can be thrown up when desired, to inspect the sieve beneath it; third, in supporting the sieve, shoe, and grain sieve therein, whereby they receive independent shaking motion from an eccentric shaft, said shaft acting directly on the grain sieve, and through a strap on the shoe; fourth, is to provide for chaffing the grain preparatory to its entrance into the blast spouts, by means of the same machine which is employed for blowing away the dust, &c., at the place where the grain enters the trunk of the fan-case; fifth, is to more effectually control the blast upon grain of different specific gravities, at the point where the grain falls into the trunk of the fan-case.

Claim.—First, the construction and arrangement of the saw-toothed agitator J in the manner and for the purpose described.

Second, the hinged apron H, in combination with the shoe E, and grain riddle *g*, substantially as described.

Third, the construction and arrangement of the eccentric shaft G, so that it gives motion directly to the screen F, and also vibrates the shoe E, substantially in the manner described.

Fourth, the shaft G, which is eccentric from one end to the other, in combination with the narrow strip *d*, which is adjustable longitudinally in the shaft, substantially as described.

Fifth, the construction of the fan-case with the parts B C′ C2 *n a*, and applying it in respect to the upper and lower ends of the sieves, substantially in the manner and for the purpose described.

Sixth, the adjustable tail-piece C2, in combination with the fan-case B and trunk C, substantially as described.

No. 52,072.—NANCY PATTON, Coles, Ill.—*Method of Preserving Eggs.*—January 16, 1866.—This invention consists in packing the eggs in layers in a suitable vessel, a layer of lime being placed between each layer of eggs. The vessel is then filled with a solution formed by dissolving 29 grains of soda, 15 grains of saltpetre, 18 grains of cream tartar, 46 grains of borax, in one gallon of water.

Claim.—The combination of the said chemicals in water, so that the liquid will harden and close the pores of the shell of the egg, toughen the membranes next to the shell and that enclosing the yolk, without destroying any of the essential qualities of the egg, but rather improving its flavor and quality.

No. 52,073.—JOHN PAULDING, New York, N. Y.—*Mechanism for Setting Type in Making Stereotype Plates.*—January 16, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—First, a revolving type-holder, as hereinbefore described, for the purpose of re-adjusting the type, as set forth.

Second, in combination with the type-holder, a series of rows of adjustable type, having a guide spring rod attached thereto, and arranged with respect to each other, substantially as described.

Third, the method of adjusting the type in the type-holder, by means of one or more stops or catches *n* and K, on the edge guide spring rod attached thereto, substantially as described.

Fourth, the sliding type-setter H, in combination with the type-holder C, when operating in the manner and for the purpose hereinbefore set forth.

Fifth, a gauge notch J, formed in the body of the type, in combination with a straight-edge slide F, when operating for the purpose and in the manner substantially as hereinbefore described.

Sixth, the general combination of all the said several parts of the said machine, as enumerated in the five preceding claims, as a means of impressing the forms of type in a plastic mould for making stereotype plates, by the single line or part of a line, from a perpetual font of type, substantially as hereinbefore set forth.

No. 52,074.—Isaac L. Plumer, Chelsea, Mass.—*Trunk.*—January 16, 1866.—This invention consists in making the upper tray removable, and attaching the same to the trunk by means of pins and slots, so that it can readily be taken out, and returned to its place.

Claim.—Attaching the tray C to the upper portion of the trunk by means of slots and pins, substantially as described.

No. 52,075.—John Rankin, New York, N. Y.—*Churn.*—January 16, 1866.—This invention consists in the combination and arrangement of the box of a shape cylindrical or nearly so, with the blower, dashers, and gearing, whereby the churn is filled by the dashers, and the cream agitated thoroughly by said dashers; simultaneously therewith a blast of air in a sheet nearly the full length of the churn is forced obliquely through a slot in the side, by means of the blower, and fills the entire vacuum created by the dashers, in such a manner as to expeditiously facilitate the churning.

Claim.—The use of a case or box A of a nearly cylindrical form, substantially as described, in connection with the two screw dashers, the whole arranged to operate in the manner and for the purposes set forth.

Also, introducing a blast of air in a sheet through a long slot in the side of the box A, and by means of a blower, substantially as described.

Also, the use of the internal gear S, friction-face wheel *l*, gears R and T, and friction pulley *q*, the whole combined and arranged to operate as and for the purpose set forth.

Also, the employment of a double set of vanes *m m*2, the shaft *p* of the blower, whereby a tendency is created in the blast to concentrate somewhat towards the centre of the slot *o*, substantially as and for the purpose set forth.

Also, making the slot *o* inclined or oblique, in cross-section, so as to tend to conduct the sheet of blast downward into the mass of cream.

No. 52,076.—Frederick Reichenback, Rochester, N. Y.—*Uterine Supporter.*—January 16, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The combination of the expanding device, consisting essentially of the ring A, hinged wings D D, and the sliding stem and tube B C with the elastic covering pessary E, the whole operating substantially in the manner and for the purpose herein set forth.

Also, the special construction of the expanding device, the same consisting of the ring A, hinged expanding wings D D, operated by wires *d f*, the clamping nut and disk *c b*, and the sliding stem B, tube C, and nut *k*, the whole arranged and operating substantially as described.

No. 52,077.—J. F. Richardson and George F. Morse, Portland, Me.—*Heel Calk.*—January 16, 1866.—This invention consists in a strip of metal, fastened to a heel by making two holes on either side of the heel. It is armed with points, and easily removable on account of its elasticity.

Claim.—The strip of metal, bent as described, and combining the tongue *c*, the springs A, and the pivots *c*, as and for the purposes specified.

No. 52,078.—Thomas C. Robinson, Boston, Mass.—*Steam Engine.*—January 16, 1866.—This invention consists in combining with the ordinary cylinder in which the power is utilized, another and similar cylinder, the piston of which is moved by that of the first one, and into which the steam is exhausted, and in which it is condensed. This secondary cylinder is connected by pipes with a reservoir which is supplied with water, a portion of which enters the condensing cylinder, where it is agitated by its piston, and brought in contact with the steam thus enclosing it.

Claim.—The arrangement, in connection with a steam engine, of an exhaust cylinder, the same as the motive cylinder substantially, and connected with the motive cylinder by two pipes and their valves, one at either end, and operated by a piston connected with the piston

of the motive cylinder, by a rigid arm, and also connected with a water-tank by two pipes, with their valves, one at each end of the cylinder, the whole constructed and operated substantially as described.

No. 52,079.—SEYMOUR ROGERS, Pittsburgh, Penn.—*Hoe*—January 16, 1866.—This invention has for its object the furnishing a cheap, light, and substantial hoe, with an eye and one or more longitudinal slots, and combining the same with the hoe-blade.

Claim.—A hoe formed by combining an eye, slotted and constructed as described, with the perforated blade, substantially as described and for the purpose set forth.

No. 52,080.—CHARLES ROWLAND, Clinton, Ill.—*Portable Fence.*—January 16, 1866.—This invention consists in the combination and arrangement of the panels, stakes, and pins, connecting the sections together, and holding the same firm in the ground, thus forming a portable fence, which can be taken down and put up at pleasure.

Claim.—The stakes C C, secured to the top boards or slats A, of the panels by pins D, and connected by pins or rods E, in combination with the stakes F and oblique pins G, all arranged and combined with the panels, to form a new and improved portable fence, as herein shown and described.

No. 52,081.—G. W. SARGENT and B. P. RIDER, Chelsea, Mass.—*Horseshoe Nail Machine.*—January 16, 1866.—In this machine two pairs of hammers are made to slide together in grooves alternately at right angles to each other, by levers connected to the hammers by mortises and tenons, working loosely; the levers are suspended to a common fulcrum at the centre, and are operated by a common cam groove in the face of the driving wheel, so formed as to give two blows of each pair of hammers to each revolution.

Claim.—The combination of four loose hammers, running in grooves moved by levers working in mortises in said hammers, said levers working on loose pins and vibrated by a cam, so formed as to give to each hammer two distinct blows to each revolution of said cam.

No. 52,082.—WILLIAM H. SEARS, Cheshire, Conn.—*Tide Wheel.*—January 16, 1866.—In this invention a vertical shaft is stepped upon the base, and having its upper bearing in the top beam of a suitable frame, has a large close disk at the bottom, upon the upper face of which disk the buckets are arranged as follows: Straight shafts are arranged to pass diametrically across the disk, and through the vertical shaft; at the ends of each shaft are hinged vanes or buckets, which, when closed, cover the whole face of the disk, and one of this segment of circles; but they are so arranged at right angles to each other on the same shaft that when the bucket is raised to receive the force of the current or wave the opposite end lies flat. The gate consists of a cylinder enclosed at top, and sliding by flanges moving in perpendicular grooves in the perpendicular parts of the frame, said cylinder fitting neatly over the entire wheel.

Claim.—As new and useful the combination of buckets D D′ E E′, more or less in number, and constructed and arranged to operate in the manner and for the purpose specified.

No. 52,083.—GEORGE SMITH, Omaha City, N. T.—*Hand Cultivator.*—January 16, 1866.—This invention consists in the construction of a frame mounted on one or more wheels, at the front of which frame is attached a bar or clamp, for the purpose of holding the standard to which the plough or hoe is attached, operated by means of screws, which standard is adjustable laterally around a strap across the rear end of the frame or handles for the purpose of pushing forward the machine with the breast.

Claim.—First, in combination with a frame A, mounted on one or more wheels C, and arranged so as to be shoved along by the operator, a clamp for holding the plough or hoe, composed of the nuts F, the bar E, placed on screw rods D D, and having a parallel position with the front bar *b* of said frame A, substantially as shown and described.

Second, the strap B applied to the handles *a a* of the frame A, substantially as and for the purpose specified.

Third, the hoe G, constructed in V-form, in combination with the upright lips or projections *d* at its rear ends, substantially as and for the purpose specified.

No. 52,084.—J. NOTTINGHAM SMITH, Jersey City, N. J.—*Hay and Cotton Press.*—January 16, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—An annular wedge or wedges, receiving the motive power direct, and operating as the driving force for applying pressure, or for analogous purposes, substantially as herein specified.

Also, two or more annular driving wedges, alternating in action so as to produce a continuous effect, substantially as and for the purposes herein set forth.

Also, the shifting or reversing gear, between the driving wheel and annular wedge rim, whereby a change is effected from increased speed to increased power and *vice versa*, while the motion of the power remains constant, substantially as herein specified.

Also, the alternating lifting posts, or reciprocating racks, for communicating the pressure or force of the annular wedges continuously to the follower of a press, or other part to be driven, substantially as herein specified.

Also, the tripping plates T T, arranged and operating substantially as herein described, in combination with the lifting posts, or reciprocating racks, for the purpose of reversing the motion of the follower or its equivalent, as set forth.

Also, the combination and arrangement of the bent levers 3 3 and adjustable blocks Y Y, operating in connection with the tripping plates, substantially as and for the purpose herein described.

Also, the construction and arrangement of the counterweighted pawls Z Z, substantially as and for the purpose herein specified.

Also, the hinged or pivoted lifting arms J J, arranged and operating substantially as and for the purposes specified.

Also, the construction, arrangement, and combination of the side doors B B of the press with their brackets, cleats, lifting arms, ways and cords, and a windlass, or its equivalent, whereby the doors are drawn away and returned to and secured in place automatically, all operating substantially as and for the purposes herein set forth.

Also, the pivoted, vibratory bar plate F, on the swinging edge of the top door of the press, arranged and operating substantially as herein set forth.

Also, the combined arrangement of the bar plate F, the opposite pivot edge of the top door, the girts projecting over them, and the cords and windlass or their equivalent, by which the door is raised and lowered, all substantially as herein described.

No. 52,085.—Stephen Spelman, Westfield, Mass.—*Washing Machine.*—January 16, 1866.—This invention consists of a lever attached to a frame which is secured to an ordinary wash-tub; to the lever is pivoted a suitable disk or rubber, which operates upon the clothes placed in the tub, so arranged that the rubber can be thrown out of the tub by raising the lever. The bottom of the tub has projections for a rubbing surface.

Claim.—The combination of the standards B B, beam C, arms E, socket K, washboard M, with its braces L, and the lever R, arranged as described and for the purposes set forth in this specification.

No. 52,086.—Irah D. Spaulding and David N. B. Coffin, Jr., Boston, Mass.—*Copying Press.*—January 16, 1866.—In this machine the follower is provided with bearings for supporting a cam which has a fluted, waved, or ribbed surface, and is provided with journals. Combined with the above is a rolling pressure beam, furnished with a lever or other suitable stops so as to counteract a part of the gain of the cam and increase its purchase at the last part of the movement.

Claim.—The adjustable cam *f*, in combination with the rolling beam *g*, constructed and applied substantially as and for the purposes set forth.

No. 52,087.—James F. Spence, Brooklyn, N. Y.—*Apparatus for Carburetting Air.*—January 16, 1866; antedated January 3, 1866.—This invention consists of a drum containing a wheel, said drum being supplied with oil through the tube. The drum is supplied with cold air through the tube, and with hot air by means of another tube, the air passing through a coil before entering said tube.

Claim.—First, the wheel B, when constructed as specified, and employed in combination with the drum A, and pipes *d d'*, to catch and confine the air and force it under the surface of the liquid, in the manner explained.

Second, the goose-neck, arranged in combination with the gas pipe F, drum A, and air supply pipe *d* or *d'*, in the manner and for the purpose substantially as herein specified.

No. 52,088.—Samuel E. Stowell, Charlestown, Mass.—*Breast Collar.*—January 16, 1866.—This invention consists in a metal spreader, bent around, so as to stand out clear from the breast strap in front, and is fastened by straps to the breast plate, near the shoulders.

Claim.—In combination with a breast strap of a double driving harness, the metal spreader, applied and operating in the manner and for the purpose substantially as set forth.

No. 52,089.—A. W. Straub, Philadelphia, Penn.—*Wheel for Railroad Car.*—January 16, 1866.—This invention consists of a car-wheel constructed in two parts: first, a rim with two flanges forming an inner recess, and, second, a hub with a web, and flange upon the web, flaring slightly outward. Slots in this flange (the circumference of which is slightly larger than that of the inner edge of the rim) permit it to spring past the flange of the rim into the inner recess. This device dispenses with the use of bolts, and gives elasticity to the wheel.

Claim.—A car wheel, consisting of rim or tire A, and the web or centre B, constructed and combined together substantially as and for the purpose described.

No. 52,090.—Augustus H. Tait and Joseph W. Avis, New York, N. Y.—*Apparatus for Desulphurizing Ores.*—January 16, 1866.—This invention consists of a furnace containing the pulverized ore, the said furnace being provided with a trap at its lower end. A current of compressed air, which is heated to 500 or 600 degrees by passing through the ore, escapes at C.

Claim.—The process herein described of desulphurizing sulphurets by a current of heated,

compressed atmospheric air impelled by a suitable pump, in combination with a closed furnace containing the ore, substantially as set forth.

Also, the use in this process of nitric oxide gas, in combination with the atmospheric air, as set forth.

Also, the use of steam in combination with the heated air, as and for the purpose described.

No. 52,091.—AARON S. TALBERT, Lexington, Ky.—*Medicine Compound.*—January 16, 1866.—This invention consists in a compound formed by evaporating the waters of mineral springs to dryness, and adding to the substance or salt thus obtained one per cent., by weight, of common salt.

Claim.—The medicinal compound or "Crab Orchard salts," as herein described, the same constituting a new and useful manufacture.

No. 52,092.—E. LAWRENCE TEVIS, Philadelphia, Penn.—*Corn Sheller for Table Use.*—January 16, 1866.—This invention is to remove corn from the cob when boiled and on the table. The engraving and claim show clearly the invention.

Claim.—The teethed blade D, in combination with branches K K′, and handle H, using for that purpose any suitable metal or hard wood, or both combined, when constructed and operating as herein set forth and described.

No. 52,093.—J. H. THOMAS and P. P. MAST, Springfield, Ohio.—*Cultivator.*—January 16, 1866.—This invention consists in the peculiar manner of attaching the shield bar to the frame; the metallic stirrup attached to the swinging bars; the pulleys attached to the standards and their combinations, and the angle plates securing the standards to the frame, and constituting bearings for the rock shaft.

Claim.—First, pivoting and bracing the shield bars C to the beams B, in such a manner that the shields will retain their relative position to the shovels when they are being moved laterally, and at the same time be permitted to play up and down independently of each other, and of the shovels, as and for the purpose set forth.

Second, the metal pieces O, constructed as shown, and arranged to operate in connection with the bars C, as herein set forth.

Third, the metal stirrup O, constructed as shown, and arranged to operate in connection with the swinging bar *b*, and beam B, as set forth.

Fourth, the pulleys *c*, secured to the standards E, in combination with the rock shaft I, chains S, and beams B, arranged as shown and described.

Fifth, the angle irons L, constructed as shown, and arranged to operate in connection with the axle G, standards E, and rock shaft I, as and for the purpose herein set forth.

No. 52,094.—JOHN A. TOPLIFF and THOMAS TUNNINGTON, Elyria, Ohio.—*Mode of Manufacturing Articles of Woven Wire.*—January 16, 1866.—This invention consists in coating articles made of woven wire with tin or other suitable metal, in order to solder the numerous joints and render the article firm and solid.

Claim.—The application to woven, twisted, or other wire work or netting, so called, of any of the ordinary galvanizing processes, substantially as and for the objects specified.

No. 52,095.—ALBION K. WASHBURN, Bridgewater, Mass.—*Pegging Jack.*—January 16, 1866.—This invention consists in a peculiar arrangement of mechanism for actuating the heel supporter, the actuator having a long metallic rod, furnished at one end with a screw, at the other with a handle, the rod going through the toe rest, and marks against the heel rest, the latter being moved so as to force the shoe and last down upon the toe supporter.

Claim.—The improved arrangement of the actuator H, relatively to the heel and toe supporters, such actuator under such arrangement being caused to pass through the toe supporter and operate against the front part of the heel supporter, substantially as hereinbefore explained.

No. 52,096.—A. F. WAGNER, Ilion, N. Y.—*Lifting Jack.*—January 16, 1866.—This invention consists in the employment of a rising and falling rack bar fitted to an upright stock, in connection with a lever fulcrumed in the upper end of a pair of brackets, and a holding pawl pivoted in the lower ends of the said brackets.

Claim.—The brackets F, projecting from the standard A, in combination with the toothed bar D, the lever G, connected by links H to the upper part of said brackets, and the detaining pawl E, pivoted at the lower ends of said brackets, in position to be readily retracted by the foot, all as herein described.

No. 52,097.—HAZEN WEBSTER, Elgin, Ill.—*Car Coupling.*—January 16, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the catch or hook *g*, when placed at, and firmly attached to, the side of the draw-bar of a bumper, substantially as and for the purposes set forth.

Second, the hook B, provided with a catch *f*, and placed on the side of a bumper or draw bar A, having a fixed catch *g* on its opposite side and arranged to operate in connection with another one similarly constructed.

Third, the arrangement and combination of the hooks B, catches *f* and *g*, so that when two are placed together each will act independently of the other in operation, and that each spring-hook attach itself to a separate fixed catch.

Fourth, placing the hooks of an automatic coupling on the side of the draw-bar, so that they will pass the fixed catches and allow the draw-bars to act as bumpers without interference from, or injury to, the hooks, and without releasing the coupling, all of the several parts and combinations being substantially as and for the purposes set forth and specified.

No. 52,098.—A. WELLS, Morgantown, West Virginia.—*Horse Rake.*—January 16, 1866.—This invention consists in applying a sliding handle to the lever by which the rake is operated, to which slide a cross-head is attached, which passes over lips upon two teeth and holds the implement in working condition.

Claim.—The lever C applied to the rake head A, as shown and provided with the spring pawl or catch E, for the lips *b b* on the rake head to bear against, in combination with the slide F, fitted to the lever C, and provided with the cross-head G, to lap over the projecting edges *a' a'* of the two teeth of the rake head, substantially as and for the purpose herein set forth.

No. 52,099.—WILLIAM WHARTON, Jr., Philadelphia, Penn.—*Railroad Frog.*—January 16, 1866.—This invention consists in securing steel plates to railroad frogs by means of bolts passing through elongated holes or slots, so that the plates shall not be detached when drawn out by the pounding of the wheels.

Claim.—The mode, substantially as herein set forth, of securing steel plates to a railroad frog, so that they can be elongated without their firm hold of the frog being affected.

No. 52,100.—NORMAN W. WHEELER, Brooklyn, N. Y.—*Ship Building.*—January 16, 1866.—This invention consists in rounding upwards the deck or decks of vessels, in opposition to the usual sheer concave. These upward sheering decks are designed to give strength and to counteract the tendency to "hogging."

Claim.—First, constructing navigable vessels, with one or more decks *c c d d*, sheered in a way opposite to the sheer of the rail *b b*, substantially as and for the purpose described.

Second, the quadrant deck *d d*, in combination with the recesses *e e*, substantially as and for the purposes described.

No. 52,101.—NORMAN W. WHEELER, Brooklyn, N. Y.—*Triangular Beam Engine.*—January 16, 1866.—The object of this invention is to introduce into general use a triangular beam engine, so arranged that the throw of the piston is greater than that of the crank. It consists in connecting the working pistons with the crank by means of the triangular beam, links and the parallel motion.

Claim.—Connecting the working pistons with the crank by means of the triangular beam *o o*, links *j j*, and the parallel motion *g g*, *k k k k l*, or their equivalents, substantially as and for the purposes described.

No. 52,102.—GEORGE L. WITSIL, Philadelphia, Penn.—*Well-boring Apparatus.*—January 16, 1866; antedated January 3, 1866.—This invention consists of a device for raising and lowering the drill in the well, and imparting to it a rotary motion; also, in certain movable parts of the frame for the more easy removal of the drill from the well, and for putting in the tubing; also, in a peculiar arrangement of the points of the drill-bit, wherein they are in pairs of different lengths, each two of the same length being opposite each other.

Claim.—First, providing for giving a rotary and vertical motion to a shaft D, which is adapted for receiving on its lower end the tubular sections E, and also for removing said shaft and the contrivances for operating it from frame A when desired to elevate the well tube, substantially as described.

Second, the combination of a windlass J, rope or chain J', and pulley *g*, or their equivalents, with the frame A, and removable supporting beams B. C, substantially as descried.

Third, the shaft D provided with a screw D', bevel wheel *a*, and removable half nuts *c c*, said parts being sustained upon the cross-beams B cap of a frame A, and operating substantially as described.

Fourth, constructing a rock drill with cutting points varying in length, and so arranged that sharp cutters are successively brought into action as the longest points are worn out, substantially as described.

Fifth, a centre discharging drill provided with cutting points *m n p*, and a centre point j, of different lengths, substantially as described.

No. 52,103.—GEORGE WOLF, Williamsport, Md.—*Churn.*—January 16, 1866.—This invention consists in a churn divided into three sections, in combination with a series of dashers, connected to and operated by means of a crank and lever alternately, thus giving the cream a forward and backward motion against the division pieces, thereby thoroughly

agitating the cream. It also consists in the combination of a crank and lever, whereby motion is given alternately to the dashers.

Claim.—First, the above-described box-churn, divided into several compartments and provided with the separate beaters B, worked by either the lever or the crank, substantially as set forth.

Second, the combination of the lever F and crank G, whether worked alternately or together, substantially as described.

No. 52,104.—THOMAS WOLFE, Girard, Ill.—*Sulky Plough.*—January 16, 1866.—This invention consists in the manner of attaching the plough beams to the frame of the machine, the arrangement for raising the ploughs out of the ground, and the adjustable connecting frame at the rear end of the beams.

Claim.—First, the connecting of the front ends of the plough beams G G by hinges H, to springs I attached to the framing of the device, in combination with the shafts cap, arms *d*, rods N, and levers P, or an equivalent means for operating the springs, substantially as and for the purpose herein set forth.

Second, the raising and lowering of the plough beams through the medium of the rods K K″, cranks K′ K‴, shafts L L′, and levers M M′ all arranged substantially as described.

Third, the adjustable frame S, constructed and applied to the plough beams G G, substantially as and for the purpose specified.

No. 52,105.—S. W. WOOD, Cornwall, N. Y.—*Cartridge Retractor for Revolving Fire-arms.*—January 16, 1866.—A lever is pivoted to the frame beneath the cylinder the short end of which is curved, and entering a small opening at the side of the cylinder into the base of each chamber, forces forward the cartridge case.

Claim.—A lever for removing metallic cartridges or empty cases from the chambers of the cylinder in revolving fire-arms, pivoted further forward than the bottoms of the chambers, or in such a manner as to act directly by lever power upon the cartridges or cartridge cases, substantially as herein set forth.

No. 52,106.—NATHANIEL W. WOODBURY, South Danvers, Mass.—*Wrench and Drill.*—January 16, 1866.—This invention consists in applying the handle of the tool at right angles to its axis, a revolving head which is embraced by a ring being on the inner end of the handle. The head is circular on its exterior, and carries at one end a flange which abuts against the side of the ring of the handle. That part of the periphery of the head which is embraced by said ring is provided with a series of ratchet teeth, with which the finger of a pawl engages. This pawl is pivoted in the side of the handle, and its toothed end is constantly pressed against the revolving head. The revolving head is perforated with a square opening of unequal diameter, so as to form a shoulder within, which shoulder comes in contact with the shoulders of a drill socket, whose shank is squared on that part which passes through the revolving head, to which it is secured by a pin.

Claim.—The combination of the handle A K, reversible revolving ratchet head B, and spring pawl C, when so arranged as to form a wrench for the manipulation of a set screw, or for the insertion of the drill socket O, or other bushings for analogous purposes.

No. 52,107.—A. B. WOODARD, Alfred Centre, N. Y.—*Vulcanizing Flask*—January 16, 1866.—This invention consists in arranging the moulding flask into a boiler in such a manner that the pressure of the steam generated therein will compress the flask automatically, the clamp which holds the flask being provided with a packing ring to prevent the escape of steam from the boiler, the clamp being held within the boiler by means of inclined planes formed on the inside of said boiler.

Claim.—First, closing the flask by the pressure of the steam itself, substantially as herein described, so that while the rubber is gradually heated, the flasks are automatically compressed, and all danger of crushing the plaster mould and the teeth is avoided.

Second, the loose flange *g* and packing ring *i*, in combination with the boiler, clamp, and flask, constructed and operating substantially as and for the purpose set forth.

Third, the inclined planes *j* on the inner surface of the boiler, in combination with the clamp and flask, constructed and operating substantially as and for the purpose described.

Fourth, the segmental connections *e* of the clamp, in combination with the flat surfaces on the flask and with the boiler, substantially as and for the purpose set forth.

No. 52,108.—JOSEPH ADAMS, Janesville, Wis., assignor to himself and NATHANIEL DEARBORN, of the same place.—*Washing Machine.*—January 16, 1866.—This machine consists of a double concave slotted bed resting on spiral springs, and a lever frame composed of two side pieces, each having a curved slot, which receive a cross-bar that projects beyond the side pieces. Attached to the said cross-bar at each side is a pendent frame, the two being connected by springs which tend to draw the frames toward each other. In the lower end of each frame is fitted a fluted roller.

Claim.—The two pendent hinged frames H H, attached to bar G and connected by springs I, to operate in combination with the double concave bed B, substantially as and for the purposes specified.

No. 52,109.—GUSTAV ANTON, assignor to himself, JACOB HIRNER, and FRANS BRUBIEN, Philadelphia, Penn.—*Fan.*—January 16, 1866.—In this invention the fan is made of feathers, the quills of which are glued in a socket handle.

Claim.—A fan having a body composed of feathers secured to a handle of wood or other suitable material, in the manner described.

No. 52,110.—JOHN C. BAILEY, assignor to CHARLES EUGENE WOODMAN, Boston, Mass.—*Shoe.*—January 16, 1866.—This invention consists in having one or more straps extending from one or both of the quarters, so as to become capable of being passed through slits made in the fly.

Claim.—The shoe upper, made not only with the fly *i* to lap over the quarters, and provided with the slits *g h*, arranged in it as described, but having one or more straps *e f* extending from one or both the quarters, so as to be capable of being passed through the slits of the fly, as specified.

No. 52,111.—JOHN B. COLLEN, assignor to himself and JOHN MCGILL, Philadelphia, Penn.—*Automatic Feed Apparatus for Steam Generators.*—January 16, 1866.—The object of this invention is to obtain at all times, when the boiler is generating steam, the requisite quantity of water, without the necessity of supervision on the part of the attendant. The novelty consists in the combination with the cap, spindle, and valves, plate tube and rods, the weighted lever, screw spindle, sleeve, and float sleeve; also the reservoir, its supply pipes, valves, and float.

Claim.—First, the reservoir A, its supply pipe W, the valves *c c'*, and float G, the whole being constructed and operating and applied to a steam boiler, substantially as and for the purpose specified.

Second, the combination with the cap B, the spindle and its valves of the plate D, tube C, and rods *a a*, or their equivalents, substantially as and for the purpose described.

Third, the combination of the weighted lever I and screw spindle E with the sleeve c, and float sleeve *c*, substantially as described for the purpose set forth.

No. 52,112.—SAMUEL P. CRAFTS, assignor to O. B. NORTH & CO., New Haven, Conn.—*Buckle.*—January 16, 1866.—This invention consists in a lever provided with two tongues; both, when inserted through corresponding holes in the trace, rest on two bars in the lower part of the frame.

Claim.—The combination of the lever B with its two tongues H I, when constructed and arranged to operate in the manner substantially as and for the purpose specified.

No. 52,113.—CHARLES HENRY FORD, assignor to himself, HAYWARD HUTCHINSON, JESSE L. HUTCHINSON, and ELIAS S. HUTCHINSON, Baltimore, Md.—*Feed Apparatus for Steam Generators.*—January 16, 1866.—The object of this invention is to supply steam generators with the requisite quantity of water. It consists in the arrangement of the vessel, of the valved water pipe, steam pipes proceeding from and to the boiler.

Claim.—The arrangement with the vessel A of the valved water pipe E and the steam pipes D C, proceeding from and to the boiler and provided with suitable valves, the whole substantially as described and represented and for the purpose set forth.

No. 52,114.—CHARLES HENRY FORD, assignor to himself, HAYWARD HUTCHINSON, JESSE L. HUTCHINSON, and ELIAS S. HUTCHINSON, Baltimore, Md.—*Steam Damper Regulator and Indicator.*—January 16, 1866.—The object of this invention is to operate the damper and furnace doors, whereby to regulate the ingress of air and intensity of heat in the furnace, and to indicate the steam pressure. It also consists in the arrangement of the adjustable post, weighted lever, piston, and packing, and in combination with the piston and lever, rod and rock-shaft, actuating the damper and furnace doors.

Claim.—First, the arrangement of the adjustable post K, weighted lever F, piston B, and the packing arrangement cap *b*, substantially as described.

Second, in combination with the piston B and lever F, the rod or chain I and rock-shaft R, actuating the damper H and furnace doors X, one or both, substantially as described.

No. 52,115.—CHARLES HENRY FORD, assignor to himself, HAYWARD HUTCHINSON, JESSE L. HUTCHINSON, and ELIAS S. HUTCHINSON, Baltimore, Md.—*Automatic Steam Generator.*—January 16, 1866.—The object of this invention is the suspending and balancing a boiler above the fire, so as to be raised or depressed by the increase and diminution of the supply of water, whereby to operate devices for regulating the supply of water and control the dampers and furnace openings. Its novelty consists in a suspended boiler, so arranged relatively to the counterpoise weights and the fire that by evaporation and loss of water, or by the influx of feed water, it shall rise or fall, and thereby actuate devices to open and close the openings for the supply of water. Also the several devices, in combination with the steam generator, which is vertically adjustable, which operate to open and close the dampers and furnace doors, and thereby control the supply of air to the furnaces.

Claim.—First, a suspended boiler, so arranged relatively to the fire and counterpoise weights that, by evaporation and loss of water, or by the influx of feed water, it shall rise or

fall respectively, and by said motion actuate devices to open or close the apertures which regulate the supply of water, substantially as herein set forth.

Second, in combination with a steam boiler, which is vertically adjustable, as described, the devices which operate to open and close the dampers and furnace doors, and thereby control the draught or supply of air to the furnace, substantially as herein set forth.

No. 52,116.—F. A. E. G. De Massas, Hoxton, England.—*Cotton Seed Machine.*—January 16, 1866.—This invention consists in the combination of a revolving cylinder, cylindrical case, both being perforated in such a manner as to form roughened surfaces, fan, and spout, whereby the seed is separated from the cotton and falls into a chute, and at the same time a current of air from the fan forces the cotton out of the spout, and is thus separated one from the other.

Claim.—First, a revolving cylinder with a rough surface, as described, in combination with a cylindrical casing, composed partly of cards and partly perforated sheet metal, as specified, the two acting in combination, substantially as set forth.

Second, in combination with a revolving cylinder and a cylindrical casing, both substantially as set forth, a fan and a spout, the whole combination acting substantially in the manner and for the purpose set forth.

No. 52,117.—Robert Francis Fairlie, London, England.—*Locomotive Engine.*—January 16, 1866.—This invention consists in arranging a boiler, having a centrally located fire-box with flues extending in two directions therefrom, upon two bogie truck frames, one under either end of such boiler, and in combining with such boiler and truck frames the cylinders which are arranged upon such frames for the purpose of facilitating the turning of curves, and of equalizing the weight upon the truck.

Claim.—First, the arrangement of the fire-box and the two boilers extending from opposite sides thereof with the two bogie frames, as set forth.

Second, the arrangement of two trucks, each provided with four or more wheels, and with one or more steam cylinders, in combination with a steam boiler B B′ constructed and operating substantially as and for the purpose set forth.

No. 52,118.—John Haworth, Manchester, England.—*Brush for Cleaning Horses.*—January 16, 1866.—This invention consists of a rotary brush or other suitable instrument, to which rapid motion is given by steam or other power: the brush thus used is fixed to the end of the pole, furnished with loose handles and with a roller and pulley, around which pulley is passed the band or strap to the shaft for driving the same. Thus it saves manual labor and performs the operation expeditiously and effectually.

Claim.—Grooming and cleaning horses and other quadrupeds by means of a brush attached to a pole or shaft, having loose handles and a suitable shaped pulley, through which pulley a rotating motion is imparted to the said brush by connecting it with any suitable driving power, substantially as described.

No. 52,119.—Francis P. Catlin, Hudson, Wis.—*Sash Supporter.*—January 16, 1866.—The nature of this invention consists in constructing a sash supporter, which shall be kept in position, to act as such by gravitation, and which, by easily changing its position by hand, may be made to act as a sash fastener through the same force.

Claim.—As a new article of manufacture, the sash supporter and fastener, constructed and operated as herein specified.

No. 52,120.—John Absterdam, New York, N. Y.—*Process for Desulphurizing Ores.*—January 23, 1866.—This invention consists in roasting the ores with wood in a retort, and blowing a current of steam through the upper part of the retort, by means of which air is drawn into the retort through two ducts, and passes through the heated ores.

Claim.—The within-described process of roasting or smelting metallic ores in vacuo, substantially as set forth.

No. 52,121.—John Absterdam, New York, N. Y.—*Process for Refining Iron and Steel.*—January 23, 1866.—This invention consists in causing a current of air to pass through the melted metal contained in a retort by blowing a current of steam through the upper part of said retort, which drives out the air from the upper part of the retort, and causes a fresh supply to enter the channels and pass through the molten metal.

Claim.—The above-described process for refining iron or making steel in vacuo, substantially as set forth.

No. 52,122.—Daniel G. Adelsberger, Emmittsburg, Md.—*Horse Rake.*—January 23, 1866.—In this invention the lever by which the rake is tilted is connected by a slotted arm to a crank wheel, driven by any suitable gearing, so that the rake may be automatically raised and lowered at such time as the attendant may desire.

Claim.—Connecting the rake-teeth of the machine with the main or revolving axle shaft F through a connecting rod *q*, wheel V, vertical lever Z, and sliding clutch Y of the shaft T, geared or otherwise properly connected with the said axle shaft, all arranged and operating together substantially in the manner described and for the purpose specified.

No. 52,123.—Loyal W. Alden, Fosterville, N. Y.—*Plough Clevis.*—January 23, 1866.—This invention consists of a spring clevis made in two sections, connected at their front by an equalizing bar, to which the team is hitched, and lugs or arms, through which, and through a plate on the beam, a pin may pass to raise or lower the line of draught, and pivoted at their rear to the beam to admit of thus raising or lowering it at pleasure.

Claim.—In combination with the sectional plates and springs pivoted at their rear to the beam, and made adjustable thereto at their front ends, the equalizing bar connected thereto, substantially in the manner and for the purpose described.

No. 52,124.—Reuben G. Allerton, New York, N. Y.—*Water-proof Fabric.*—January 23, 1866.—This invention consists in applying a thin coating of India-rubber to the surface of paper and then vulcanizing it.

Claim.—The water-proof fabric formed in the manner specified.

No. 52,125.—William C. Baker, New York, N. Y.—*Curb Bit.*—January 23, 1866.—This invention consists in the application of a spiral spring to the cheek-piece, in combination with a movable, sliding driving eye.

Claim.—The application of a spiral spring to the cheek-piece of the curb bit in combination with a movable, sliding driving eye, the whole constructed, attached, and operated substantially in the manner hereinbefore described.

No. 52,126.—William N. Barnett, Urbana, Ohio.—*Carriage-top Prop Blocks.*—January 23, 1866.—This invention consists in constructing carriage-top prop blocks of flexible India-rubber, for the purpose of securing durability, neatness, and cheapness.

Claim.—Carriage-top prop blocks, made as described above, as an article of manufacture.

No. 52,127.—George Bevitt, Madison, Wis.—*Sugar ill.*—January 23, 1866.—This invention consists in arranging under the sill that supports the crushing rollers, springs of rubber, and a scraper between the lower rolls, so shaped and placed that the wear tends to keep its edges sharp.

Claim.—First, the combination and arrangement of the bar E and spring *d* for supporting the rollers C and D, as shown and described.

Second, the scraper *o*, constructed as shown and described, and arranged to operate in combination with the rollers C and D, as set forth.

No 52,128.—George Bevitt, Madison, Wis.—*Billiard Cue.*—January 23, 1866.—The object of this invention is to obviate the necessity of a frequent renewal of the leathers on the end of billiard cues, which is effected by securing the leather in a properly shaped ferrule on the end of the cue by means of a split conically-shaped screw plug.

Claim.—Securing a leather to a billiard cue by means of a split conical-shaped screw plug, in combination with a proper-shaped ferrule attached to the cue, substantially in the manner described.

No. 52,129.—Charles B. Boyle, New York, N. Y.—*Combining Photographic Lenses.*—January 23, 1866.—This invention consists in combining two or more lenses in geometrical ratios of each other, so that, whatever result to be accomplished, whether it be a positive focus, as in the photographic camera, or a combination with the eye, as in the microscope or telescope, the result growing out of such ratios will be superior in definition and illumination to that obtained by the systems at present in use.

Claim.—The system of combining lenses in geometrical ratios of each other, as described and set forth on the foregoing specification and accompanying drawings.

No. 52,130.—R. H. Boynton, Oshkosh, Wis.—*Spoke Machine.*—January 23, 1866.—This invention consists of a planing machine with an endless carriage, upon which is placed the spoke to be dressed, and is fed to the revolving cutters, which are so constructed in two parts as that the said parts will at the proper time articulate and give the proper shape to the spoke being dressed.

Claim.—The rotating cutters *u u*, bent levers 4 4, lever *m'*, and cam-shaped pattern s, arranged with reference to each other and to the endless bed or chain *y*, substantially as and for the purpose herein set forth.

No. 52,131.—R. Moss Breckinridge, Meriden, Conn.—*Hand-saw.*—January 23, 1866.—This invention consists in providing for revolving the saw blade in a frame by having the shaft of the saw pass through the sockets of the frame. Upon the forward pintle is a screw and nut. Upon the socket are notches, and in the pintle are pins, so that, as the saw is revolved, the pins will fit in the notches and hold fast the screw.

Claim.—Securing the saw in any desired position in the frame by means of the journals E and G, revolving in rockets D and H, to which the saw is attached, and in which are pins *a a a' a'*, fitting in notches *b b*, and clamped in place by the screw *d* and nut *e*, when arranged and constructed substantially as described.

No. 52,132.—Frank F. Brower and George C. Campbell, Ottawa, Ill.—*Method of Disintegrating and Desulphurizing Gold, Silver, and Copper Ores.*—January 23, 1866.—This invention consists in smelting the ores with any suitable flux, such as carbonate of soda, in a retort or furnace, and precipitating the fused mass into cold water, by means of which the ore is disintegrated, and the sulphur and other foreign substances separated therefrom.

Claim.—The within-described method of disintegrating and desulphurizing ores found in combination with quartz or silver, by smelting them in combination with carbonate of soda, or other suitable flux, and then precipitating the fused mass into water, substantially as described.

No. 52,133.—Alfred C. Brush, Darien, Conn.—*Process for Treating Fur.*—January 23, 1866.—This invention consists in subjecting the fur to the action of steam in a closed vessel.

Claim.—The process, substantially as above described, for treating fur, wool, and hair, and preparing them for felting or other purposes.

No. 52,134.—E. & A. Buckman, East Greenbush, N. Y.—*Horse Hay-fork.*—January 23, 1866.—This invention consists in pivoting the grasping forks to the lower ends of two arms, crossing each other and moving upon a common pivot, and in attaching each fork by a pivoted bar to the opposite arm in such manner that said forks assume a vertical or horizontal position, accordingly as the arms are opened or closed; also, in the arrangement of the tripping device, which will be readily understood from the claim and drawing.

Claim.—First, the pivoted forks B B at the lower ends of the arms or levers A A, connected to said arms or levers by rods *e*, to cause the forks to move automatically by the movement of the arms or levers, substantially as described.

Second, the bars C C, connected to the pivot bolt *a* of the arms or levers A A, in combination with the rods I I, fitted in the upper parts of the arms or levers, and having the hoisting rope and discharging ropes G J attached respectively to them, and all arranged to operate substantially as and for the purpose specified.

No. 52,135.—Henry Bundell, Dayton, Ohio.—*Seeding Machine.*—January 23, 1866.—This invention consists in the combined use of a zig-zag channel feeder with an agitating wheel, and arranged to operate in a divided cup and in the seed hopper, so as to take up, carry around, and drop the seed or grain without allowing it to clog or bridge over the channels.

Claim.—Combining with the shafts the sets of zig-zag channelled wheels and interposed agitating wheel working in the hopper and in the sectional case and shield below the hopper, substantially in the manner and for the purpose described.

No. 52,136.—Mary P. Carpenter, Buffalo, N. Y.—*Mop Wringer.*—January 23, 1866.—This invention consists in the combination with a mop of a pair of wringing rollers, so arranged that a floor can be mopped and the water wrung from the mop without wetting the hands.

Claim.—The combination of a wringer with a mop, substantially as specified.

No. 52,137.—William I. Carroll, Natchez, Miss.—*Cotton Tie.*—January 23, 1866.—This invention consists in forming the band with a slot in each end, in which are passed fastenings of the form shown in the engraving, by which the ends of the bale band may be readily secured together.

Claim.—The devices or fastenings *d* and E, constructed and arranged as herein described and for the purpose set forth.

No. 52,138.—Edwin Chesterman, Roxbury, Mass.—*Shoe.*—January 23, 1866.—This invention consists in interposing a lining of hair, wool, felt, &c., between the upper and outside, and the usual lining of a boot or shoe.

Claim.—Interposing a lining of hair, wool, felt, or some other material between the upper or outside and the usual lining of a boot or shoe, for the purpose of keeping the feet warm in cold weather, substantially as specified.

No. 52,139.—Amos B. Christ and Henry H. Stehman, Manor Township, Penn.—*Safety Bridle.*—January 23, 1866.—This invention consists in the application to the bit of a check strap, which is brought over side pulleys in buckles, and carried through the ring of the bit, and in attaching short branches, one to the ring on said safety or check strap, and the other elastic attached to the ring of the bit in the ordinary manner, so that a single line can be used either in driving one or two horses, by the use of the branch attachments.

Claim.—First, the combination of a strap E and roller *e f*, with a safety strap B, having one end affixed to the ring A of the bridle bit, and carried up over a roller and then down through the ring A of the bit to its connecting and retaining ring D, in the manner and for the purpose specified.

Second, a short elastic branch L affixed to the ring A of the bridle bit, together with a branch F attached to the ring D on the safety strap B. When both branches are connected to the ends of an ordinary single line, in the manner and for the purpose specified.

No. 52,140.—WILLIAM B. COATES, Philadelphia, Penn.—*Iron Holder.*—January 23, 1866.—This invention consists in the combination of strips of metal and wood, with cloth, the whole forming a holder for handling hot and cold irons.

Claim.—The application of wooden strips B, covered or faced with metal C, riveted or secured to a fire-proof stay piece or pieces A, for the purpose of handling hot or cold iron, the whole being constructed in the manner and for the purposes as already fully described and set forth in the foregoing specification.

No. 52,141.—JESSE A. CRANDELL, New York, N. Y.—*Sleds for Children.*—January 23, 1866.—This invention consists in the employment of a secondary bed, which may be formed of carpet, or any suitable material, and attached to the sled proper in such a manner as to provide a soft surface for the occupant, and when desirable may be converted into a chair by turning up the rear part of the secondary bed.

Claim.—First, in combination with the sled A the use or employment of the secondary bed B, when the same shall be constructed and combined substantially as set forth and for the purpose specified.

Second, constructing the secondary bed B and framework to support the same in such a manner that the same may be readily converted into a chair, for the purpose specified.

No. 52,142.—FRANK E. DARROW and DEAN E. PECK, Bristol, Conn.—*Toys and Dolls.*—January 23, 1866.—This invention consists in the employment of raw hide in the manufacture of toy dolls for children.

Claim.—The employment of raw hide in the manufacture of toy dolls, substantially as described.

No. 52,143.—EDWARD DAVIDSON, Providence, R. I.—*Anchor Tripper.*—January 23, 1866.—This invention consists of a hook-lever, hung in the proper position upon the cat head, upon the hook end of which one end of the chain by which the anchor is suspended from the cat-head is hung, while the other, passing over a suitable pulley of the cat-head to the deck of the vessel, is drawn or hauled in by any proper means, thereby raising the anchor. The anchor is "let go" by releasing the device which holds the hook.

Claim.—The lever or arm A having a hook-shaped end *b*, in combination with the button G, arranged together and operating as and for the purpose specified.

No. 52,144.—CLARENCE DELAFIELD, Staten Island, N. Y.—*Manufacture of White Lead.*—January 23, 1866.—This invention consists in precipitating the carbonate of lead from a solution of the nitrate of that metal, by means of a solution of carbonate of potash or potash.

Claim.—First, manufacturing white lead by the use of the above-described chemicals, or their equivalents, for this purpose, so combined, applied, or united as to yield saltpetre as a residue of the process.

Second, the use of the above-described chemicals, or their equivalents, for this purpose, when so combined, united, or applied as to produce the white lead of commerce.

Third, manufacturing the white lead of commerce by substituting the above-described process.

No 52,145.—CLARENCE DELAFIELD, Staten Island, N. Y.—*Manufacture of Saltpetre.*—January 23, 1866.—This invention consists in forming saltpetre by decomposing a solution of nitrate of lead by a solution of carbonate of potash, the process giving a precipitate of carbonate of lead and saltpetre, or nitrate of potash in solution.

Claim.—First, manufacturing saltpetre by the use of the above-described chemicals, or their equivalents, for this purpose, so combined, applied, or united as to yield white lead as the residue of the process.

Second, the use of the above-described chemicals, or their equivalents, for this purpose, when so combined, united, or applied as to produce the saltpetre of commerce.

Third, the manufacture of the saltpetre of commerce, by substantially the above-described process.

No. 52,146.—ALEXANDER DICK, Buffalo, N. Y.—*Cradle.*—January 23, 1866; antedated January 17, 1866.—This invention consists of a suitable frame, supporting a basket or cradle, so that it may be swung and turned on pivots in different directions at the option of the nurse.

Claim.—The arrangement of the cradle basket B, the hoop C, the screw N, the bearer O, the pivots P P, and the frame A, substantially as and for the purpose specified.

No. 52,147.—CLEMENT C. DICKEY, Philadelphia, Penn.—*Powder-flask Charger.*—January 23, 1866.—In this invention the nozzle or charging spout of the powder-flask is hung or pivoted between two stationary supports, to which the cut-off or valve is attached, so that on the nozzle being inserted into the muzzle of a fire-arm, the turning of the flask to one side opens the valve and empties the charge into the barrel.

Claim.—The combination of the nozzle C, connected by the trunnions to supports D, the valves E and *b*, and spring *g*, all arranged and constructed to operate as and for the purpose described.

No. 52,148.—LORENZO DOW, Piermont, N. Y.—*Boring or Drilling Tool.*—January 23, 1866; antedated January 10, 1866.—This invention consists in soldering or brazing the cutters into separate removable blocks of steel, made with dovetail tongues, and inserted into dovetail grooves in the stock, or otherwise attached to the stock in a suitable manner.

Claim.—Attaching the diamonds, or other stones which constitute the cutters of the boring tool, to the stock by soldering, brazing, or otherwise securing the settings of the said stones into removable blocks of steel, or other hard metal, which are dovetailed, or otherwise secured in the stock, substantially as herein described.

No. 52,149.—CHARLES M. DUPUY, New York, N. Y.—*Manufacture of Wrought Iron directly from the Ore.*—January 23, 1866.—This invention consists in placing the pulverized ore, freed from earthy impurities by washing, in canisters made of iron, from ten to twelve per cent. of charcoal being added to the ore to deoxidize it. The canisters are then placed in a furnace and raised to a red heat, or a heat sufficient to deoxidize the ore, which is maintained until the ores are completely deoxidized. The temperature is then raised to a welding heat, and the canisters are broken up by means of a proper tool, after which they are withdrawn and subjected to the action of a squeezer, hammer, or other contrivance for completely welding the particles of iron together.

Claim.—The process of obtaining wrought iron from ore by subjecting them to heat when mixed with carbonaceous matter and charged in iron canisters, which latter are welded up and balled together with their contents; the process being conducted substantially in the manner described.

No. 52,150.—JOHN ERICSSON, New York, N. Y.—*Operating Gun Carriages.*—January 23, 1866.—In this invention the gun carriage is moved on the chassis by a system of gear operated by a crank; a lateral friction compressor within the principal spar [illegible] employed to partially resist the recoil of the carriage. A windlass, operating on a toothed bar or rack attached to the chassis, controls the traversing or directing movement.

Claim.—First, a rotary compresser, composed of a series of metallic disks secured to a shaft provided with pinions, which pinions, by means of toothed racks, check the recoil of cannon; said metallic disks being contained within a cog wheel which revolves freely on the said pinion shaft, and to which said cog wheel is secured a series of disks composed of wood, or similar material, inserted between the metallic disks, substantially as described.

Second, the toothed rack Q, pinions P'' and P''', and cog wheel P, or their equivalents, for changing the direction of the slide frame and pointing the gun, substantially as described.

No. 52,151.—LEVI S. FALES, Boston, Mass.—*Apparatus for the Distillation of Tar and other Substances.*—January 23, 1866.—This invention consists of a still, made in the ordinary manner, and provided with a dome, which is connected with the condenser by means of a goose-neck. The dome is surrounded by a jacket, and has within it a vessel which may be supplied with water in any suitable manner. The vessel and jacket are provided with cocks for the escape of the water; the cooling power of the vessel and jacket is regulated by means of the quantity of water allowed to flow through them.

Claim.—First, in combination with a cooling chamber at or near the outlet of a retort, between it and the ordinary condenser, for the separation of the heavier from the lighter vapors eliminated in the distillation of tar and heavy oils and substances, the employment of means of regulating the supply or action of the cooling medium, substantially as herein described, whereby a uniform density of light oil is obtained.

Second, increasing the cooling effect as the heat of the still is increased, either by increasing the effective cooling surface or increasing the flow of the cooling medium, substantially as herein described.

Third, the arrangement of the cooling surfaces around or within a dome or elevated chamber situated directly over the retort, and in such unobstructed communication therewith as to form, in effect, a portion thereof, substantially as and for the purpose herein specified.

No. 52,152.—CHARLES H. FINSON, Bangor, Me.—*Horse Rake.*—January 23, 1866.—This invention consists in the use of a balanced frame by means of which the rake is tilted, the teeth bars being so attached to the front end thereof, as to assist by their weight in the discharge of the load.

Claim.—First, the combination of the teeth arms C, bars E and F, and levers *c*, as and for the purposes specified.

Second, the tilting device, as constructed, with levers *c*, bars E and F, and lever *g*, when arranged to operate substantially in the manner and for the purposes specified.

No. 52,153.—JAMES B. FORSYTH, Roxbury, Mass.—*Roller for Wringers.*—January 23, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, a roller in which the core is permanently secured independently of the shaft, and which, together with its core, can be removed from the shaft or attached to the same, substantially as described.

Second, the adjustable collars *b*, in combination with the shaft or mandrel B, tube or hollow core A, and roller, substantially as and for the purpose set forth.

No. 52,154.—R. E. Frye, Manchester, N. H.—*Buckle.*—January 23, 1866.—This invention consists in jamming the running part of a strap against a cross-bar or bed plate, by means of a pawl, and in combining with the latter a friction roller.

Claim.—First, the combination of the frame E E D, and sustaining bar A, with the pawl B, substantially in the manner and for the purpose set forth.

Second, the combination of the sustaining bar A, the pawl B, and friction roller C, substantially in the manner and for the purpose described.

No. 52,155.—Edward P. Furlong, Westbrook, Me.—*Wrench.*—January 23, 1866.—This invention consists in providing the jaws of a wrench with a groove or grooves.

Claim.—Constructing a groove on the inner face of the jaws of a wrench, as and for the purposes described.

No. 52,156.—Emery R. Gard, Chicago, Ill.—*Brick Machine.*—January 23, 1866.—This invention consists in the revolving wing or wings applied to a mould table which has a continual reciprocating motion communicated to it by the gearing.

Claim.—The continuously revolving spiral wing or wings D D when applied to a mould table or bed F, which has a continual reciprocating motion communicated to it by gearing, or the equivalent thereof, substantially as and for the purpose herein specified.

Also, the combination of the pins *v v*, in the projecting stems of the followers, with the double ledges *u*, *u* of the tracks N N, for the purpose herein specified.

No. 52,157.—Edward M. Gardner, Nantucket, Mass.—*Ice Creeper.*—January 23, 1866.—This invention consists of a thin and flexible frame of metal, bent to fit to the underside of the sole and heel of boots and shoes covered with list or woollen cloth, wound around the frame.

Claim.—The improved ice creeper, constructed substantially as described, viz., of the flexible or elastic frame and the cloth covering, arranged together as specified.

No. 52,158.—John L. Gill, Jr., Columbus, Ohio.—*Railroad Car Truck.*—January 23, 1866.—This invention consists in recessing the bolster in the middle or on each side in such a manner that it can be suspended upon half elliptic springs occupying the recessed spaces between or on the sides of the bolster, vertically.

Claim.—First, making a bolster recessed on each side, making a space to admit of the springs between the bolster and the bolster frame.

Second, making a bolster recessed in the middle to admit of the springs vertically, with one end attached to the bolster and the other to the bolster frame, as specified in the foregoing specification.

Third, the arrangement of bolster in combination with the half elliptic springs.

No. 52,159.—James S. Gilmore, Millersburg, Ill.—*Cultivator Plough.*—January 23, 1866.—This invention consists in the arrangement by which the pair of double shovels are lifted and shifted laterally, and adjusted so as to work at any distance apart.

Claim.—First, the arrangement of the plough shanks F F^2 F^3, square shafts D H, adjustable clevises or arms E H′, chains I′ I′, cog wheels K L, and lever L′, as and for the purpose described.

Second, the arrangement of the shaft O, curved bar P, stirrups Q Q, vertical arm R, bar S, uprights S′ S′, curved bars V V, and pins *t t*, as and for the purpose specified.

Third, the reversible lever W, in combination with the shaft O, and set screws *w*, as described.

No. 52,160.—Joseph S. Godfrey, E. J. Godfrey, and Russell Godfrey, of Leslie, Mich.—*Washing Machine.*—January 23, 1866.—This invention consists in so constructing a washing machine having reciprocating rubbers that alternately approach and recede from each other that the articles which are washed will receive from said rubbers a beating, rubbing and rolling action.

Claim.—First, constructing the reciprocating rubbers C and D, with stepped slatted surfaces, the slats of which are so arranged that they shall rub, squeeze, and roll the article between them, substantially as described.

Second, the combination of the rubber C, with a rubber D, which receives a backward and forward movement and also a rising and falling movement, and which is held down at the proper time to squeeze the article by means of the strips *g g*, substantially as described.

Third, the combination of two reciprocating stepped rubbers, C and D, with the swinging supports *d d*, and the holding down strips *g g*, all arranged to operate substantially as described.

Fourth, arranging the slats of the rubber D in planes, which are above the slats of the rubber C, in combination with the holding-down strips *g g*, substantially as described.

No. 52,161.—Oliver W. Gordon and Nathan T. Frame, Salem, Iowa.—*Loom.*—January 23, 1866.—This invention is designed both for hand and power looms. The two hooked drivers for operating the single picker staff are attached to it by a strip of leather, and each, in turn, is caught by and freed from a pin within an opening in the batten. The uprights of

the harness shafts are so connected to them as that the same pin on the pattern barrel which lifts shall not depress the shaft, thus giving a positive motion, both in ascending and descending. Similar barrels operate both ends of the harness shafts; these shafts have guide eyes on them by which they rise and fall upon guide wires, which are removable from the boxes in which the ends of the harness shafts move. The motion of the batten, by means of a cord, operates a spring pawl to rotate the pattern cylinders

Claim.—First, a device for communicating motion from the batten C to the picker staff E, without the use of auxiliary pulleys, by means of the drivers D and flexible hinge, substantially as set forth.

Second, constructing the harness shafts G, and their uprights *g*, and projecting ends *g' g''*, as and for the purposes set forth.

Third, raising and lowering both ends of the harness shafts simultaneously, by a positive action, substantially as and for the purpose set forth.

Fourth, the cylinders F, so arranged as that their axis shall be at right angles with the planes of the harness shafts, and, by means of pins thereon, giving a positive motion, both ascending and descending, to the harness shafts.

Fifth, the combination of the batten C, the cord I, lever and ratchet H, with the cylinder F, substantially as and for the purpose set forth.

Sixth, the removable guide L, in combination with the harness and shafts G, having eyes or their equivalents for such guides, constructed and arranged substantially as and for the purpose set forth.

Seventh, the arrangement of the cases B, and the pawl and lever X, and ratchet H, cylinder and harness shafts, constructed and combined substantially as set forth.

No. 52,162.—Lyman Gray, Pittsburg, Penn.—*Coupling for Shafting.*—January 23, 1866.—In this device two or more pawls are applied within a metallic sleeve, arranged at such an angle to the axis of the shaft or shafts that one end of each pawl will press against and bite into the periphery of the shaft or shafts, so as to prevent their rotation in either direction within the sleeve when in use.

Claim.—The application and use of two or more pawls, within a metallic sleeve, arranged at such an angle to the axis of the shaft or shafts that one end of each pawl presses against and bites into the periphery of the shaft or shafts, so as to prevent their rotation in either direction within the sleeve when in use.

No. 52,163.—Solomon S. Gray, Boston, Mass.—*Paper Collars.*—January 23, 1866.—This invention will be understood by reference to the claim.

Claim.—A paper or paper and cloth turn-over collar, with a curved or concave bottom, and turned over on a line curved in the same direction, substantially as and for the purpose set forth and described.

No. 52,164.—John Grieves, Brooklyn, N. Y.—*Drills for Wells.*—January 23, 1866.—This invention consists in the novel construction of a wheel, whereby a very great amount of cutting surface is exposed to act against the rock, and it is so shaped as to be easily sharpened or dressed upon the anvil. The peculiar construction of this drill is also well adapted to its connection with a sand or sludge pump.

Claim.—First, the drill constructed of the two curved pieces A B and trimming bit D combined, substantially as herein described.

Second, the casing F in combination with the portions A B of the drill, substantially as and for the purpose herein set forth.

Third, the valve box H constructed and applied to secure the drill to the tubular rod and to secure the casing F, substantially as herein described.

No. 52,165.—Henry Hammond, Bridgeport, Conn.—*Cartridge Retractor for Revolving Fire-arms.*—January 23, 1866.—In this invention the cylinder of a revolving fire-arm is provided with a sleeve or thimble which partly enclosing its rear end has its annular base lying under or forward of the flanges of the metallic cartridges, so that on retracting the said thimble the cartridge shells are all expelled together from the chambers of the cylinder.

Claim.—The cartridge shell extractor for revolving fire-arms herein described, consisting of an external sleeve or thimble fitting over the cylinder and down behind the rim of the cartridge and sliding on the cylinder, substantially in the maner herein set forth.

No. 52,166.—John I. Herrick, Horicon, Wis.—*Washing Machine.*—January 23, 1866.—This invention consists in the combination of the operative parts by which motion is communicated to the rubbing boards.

Claim.—The combination of the shaft, link and staples, and the standard to the crank shaft or windlass, whereby the shaft and movable wash-board is moved forward and backward, as specified.

No. 52,167.—L. B. Hoit, Cedar Falls, Iowa.—*Reaping and Mowing Machine.*—January 23, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, the cam F, provided with oblique wings or flanges *g g'*, arranged as shown, to impart a reciprocating motion to the sickle through the medium of the link and pitman,

and at the same time cause the latter to be automatically thrown out of gear with the cam at either side of the same when the machine is backed, substantially as described.

Second, the yoke or levers D, employed to so connect the finger bar E and cam F that the latter will partially counterbalance the former.

Third, the combination and relative arrangement of the raising lever K, yoke D, cam F, and finger bar E to facilitate the elevation of the cutting apparatus and adapted to be raised to any height without throwing it out of gear.

No. 52,168.—Chester C. Holman, Clayville, N. Y.—*Harvester.*—January 23, 1866.—This invention consists in the construction of the main and coupling frames and the cutting apparatus, in such a manner that they are adapted to the changing of the cutting apparatus from the right to the left side of the machine and *vice versa*. In the arrangement of levers, &c., whereby the attendant is enabled to effect such change in the cutting apparatus while in his seat on the machine; in the construction of the inner double shoe; in the manner of attaching the tongue, and in the arrangement of the peculiar ratchet device for connecting and disconnecting the main drive wheels.

Claim.—First, the frame A A′ A″ constructed as shown and described and used, in combination with the reversible brace frame C, and shoe O, as specified, whereby the cutting mechanism may be operated on either side of the machine, as herein described.

Second, the connecting brace frame C, with the pinion *d*, spring catch *f*, cord or chain *g*, foot lever G, and segment lever F, arranged and operating in the manner and for the purposes specified.

Third, the shoe O and roller *q* constructed as described, in combination with the connecting brace frame C and the cutting mechanism D, substantially in the manner and for the purpose herein set forth.

Fourth, attaching the pole or tongue E to the upright portion of the frame A, which is in advance of the brace frame, by means of the lugs *c c*, pivot *e*, stirrup *b*, and spring *r*, arranged in the manner shown and described.

Fifth, the employment of the converging spur gear or ratchet wheel Q, with its pawl *s*, arm *t*, spring *u*, and pin *w*, arranged as described for connecting and disconnecting the driving wheels with the working mechanism.

No. 52,169.—Horace Holt, Brooklyn, N. Y.—*Marking Wheels.*—January 23, 1866.—This invention consists of a revolving type wheel arranged in a suitable handle, in combination with an ink-roller, in such a manner that by carrying the said type wheel over the cover of a box, or over any other surface, the types on the said wheel will produce an impression, and the marking of a box or other article can be distinctly and expeditiously effected.

Claim.—First, the combination of the type wheel A, inking-roller C, and ink reservoir *c*, all constructed, arranged, and operating as specified.

Second, the yielding flanges *b*, on type wheel A, constructed and operating substantially as and for the purpose described.

Third, the spring *g* applied in combination with the type wheel A, stud *h*, and pin *i*, or their equivalents, substantially as and for the purposes set forth.

No. 52,170.—James Howarth, Monroeville, Ohio.—*Coupling for Carriage Thills.*—January 23, 1866.—This coupling is constructed of two plates, so that when secured together the connecting bar is held between them, forming the coupling joint. Extending upwards from the side of each of the plates are heads or ears, made concave or rounded on the inside. The concave heads are securely held on the centre-points by means of a bolt. One section of the coupling is cast with an arm extending under the axletree, and the front part of the said arm is formed into a clutch that fits on a part of the other section of the coupling.

Claim.—First, the plates A and B and clutch G, in combination with the bolts E *h*, when arranged as and for the purpose substantially as set forth.

Second, in combination with the above-described construction, the heads A B concaved, and the bar-points *b b*, all arranged as shown, for the purpose specified.

No. 52,171.—D. H. Howell, Independence, Iowa.—*Hand Corn Planter.*—January 23, 1866.—This invention consists in the employment or use of the seed-conveying tubes, arranged with seed boxes and a seed-distributing device, and all constructed in such a manner that the device may be manipulated with the greatest facility, and two rows of corn planted simultaneously.

Claim.—The reverse cranks *d d* on the shafts E E, provided respectively with the cups G, and handle F, and arranged substantially as shown, with the box B, having the seed-conveying tubes A A attached, to operate in the manner as and for the purpose set forth.

No. 52,172.—Sidney Hudson, Milford, Mich.—*Fruit Ladder.*—January 23, 1866.—This invention consists of a single and combined pointed ladder, for the purpose of making easy and convenient the gathering of fruit from high or low trees, and for trimming and grafting them, by passing the pointed end through the branches to any limb or nook desired. There is also an adjustable platform attached to the rounds.

Claim.—First, tapering ladder H, the sides of which are brought to a point, as and for the purpose herein shown and described.

Second, the extending of pointed ladder H, by connecting its lower end to the upper end of a corresponding tapering ladder R by suitable couplings, as and for the purpose herein shown and described.

Third, platform A, which consists of two steps at right angles, with four adjusting hooks, as and for the purpose herein described.

No. 52,173.—ALBERT KLEINSCHMIDT and FRANCIS SCHLATER, Philadelphia, Penn.—*Tool for making Lighters.*—January 23, 1866.—This invention consists of a plane having a very oblique setting knife or cutting bit. Just forward of said bit is a channel having the same angle in respect to the plane that the bit has, so that as the shaving is cut by the bit, it is forced out through the channel, which causes it to be twisted around in the form that paper lighters are made by hand.

Claim.—The within described plane, with its longitudinal groove *e*, diagonal cutter B and diagonal groove *f*, the whole being arranged substantially as and for the purpose herein set forth.

No. 52,174.—CHARLES F. KIMBALL and ALEXANDER PARSONS, Portland, Me.—*Bits for Boring Holes.*—January 23, 1866.—This invention consists in attaching to the shaft of a boring bit a counter sink, or a cutting lip, that will enlarge the hole bored by the bit, it being adjustable on the bit, and having an adjustable gauge to determine the depth of hole or counter sink.

Claim.—The combination of the part A having the hole and knives *e* and *f*, as described, with the screw B, the nut *d*, and the gauge *c*, all as and for purposes specified.

No. 52,175.—J. LANCASTER, Baltimore, Md.—*Grain Binder.*—January 23, 1866.—This invention consists in the construction, arrangement and manner of operating certain mechanical devices for compressing the gavel, for passing the band around and properly securing the same, and for discharging the bound sheaf.

Claim.—First, the band carrier M, constructed of two parts connected by a joint in connection with the cord carrier R, arranged to operate in the manner substantially as and for the purpose set forth.

Second, the sheaf presser Y in connection with the band carrier M, and the wire-twisting apparatus, consisting of the rotating cylinder C′ E′, all arranged to operate in the manner substantially as and for the purpose specified.

Third, the sliding plates A, and wing B, comprising the gatherers, arranged to operate substantially as described and for the purpose set forth.

Fourth, the sheaf dischargers H′ H′, arranged to operate in the manner substantially as described.

Fifth, the reciprocating bars D P W A′ F′, arranged as herein described, to communicate motion to the various operating parts from a single driving shaft K.

No. 52,176.—Suspended.

No. 52,177.—PETER LEAR, Medford, Mass.—*Chimney Cap or Conical Ventilator.*—January 23, 1866.—In this invention, under a close cap are buckets or pieces of sheet metal, bent in a V-shape, arranged about the perimeter, and these acted upon by the wind, impart motion to the cap; and by an axis pivoted in an arbor over the top of the cap, and into a step in the top of the chimney, motion is communicated to wings, fastened to the axis in the stationary chamber in shape of the frustum a of cone below the cap. Between the cap and this chamber is a sufficient space to allow an escape draught from the chimney.

Claim.—First, the combination as well as the arrangement of the stationary conical case A, with one or more rotary wings *g*, and a wind wheel D, or buckets and cap, applied to the spindle C.

Also, the combination as well as the arrangement of the support tube B, with the stationary conical case A, one or more rotary wings *g*, and a wind wheel D, applied to spindle C.

Also, the combination as well as the arrangement of the socket tube F, applied or to be applied to the chimney with the support tube B, the stationary conical case A, and one or more rotary wings *g*, and wind wheel D, arranged as specified.

Also, the application of the step bar *a* of the spindle to the support tube B, when combined with a conical case A, having one or more rotary wings *g*, and a wind wheel D, arranged with respect to it, and applied to a spindle *c*, as described.

Also, the application of the pivot-supporting bar *d*, directly to the conical case A, having one or more rotary wings *g*, and a wind wheel D, arranged and combined with it as specified.

No. 52,178.—WORLEY LEAS, Kokomo, Ind.—*Belt Coupling.*—January 23, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—A belt coupling, composed of two parts A A of metal or other suitable material, bent or otherwise formed, so as to have two parallel parts *a a*, between which the ends of the

belt are secured by rivets or screws, and having rounding edges *b*, with recesses *c* made in them to form projecting portions *d*, the latter of one part A fitting in the recesses *c* of the other, with a pin or pintle C passing through the portions *d*, substantially as described.

No. 52,179.—RUFUS LEAVITT, Melrose, Mass.—*Eyelets.*—January 23, 1866.—The distinguishing characteristic of this eyelet is that the axis of the eye is parallel to the surface upon which it is fastened, and the plane of the eye is made transverse to, and projects outward from the same surface; the object being to enable the cord that works through the eye to run freely, without undue friction from either the eye or the surface to which it is attached.

Claim.—The eyelet herein described as a new manufacture.

No. 52,180.—JOSIAH M. LEEDS and JOSEPH E. HALLOWELL.—Kokomo, Ind.—*Post-hole Auger.*—January 23, 1866 —The object of this invention is the construction of a post-hole auger in such manner that the elasticity of the metal of which it is composed shall be utilized for retaining the earth within its grasp during the operation of digging, instead of relying upon the packing of the earth within the auger to do the same thing.

Claim.—A post auger having its body A, composed of spring metal, and with its cutting rod bevelled as at $f\, f^1\, f^2$, in combination with braces B B, or their equivalents, substantially as described.

No. 52,181.—GEORGE F. LYNCH, Milwaukee, Wis.—*Railroad Car Box.*—January 23, 1866.—This invention will be understood by reference to the claims and engraving.

Claim —First, the construction of railroad-car boxes in two distinct but dependent parts, substantially in the manner and for the purposes herein described, set forth and explained.

Second, the truncated ovoidal or elliptical form of the railroad-car box, substantially as herein set forth and described.

Third, the combination of set screw, Fig. 2, jam nut, Fig. 3, shock plate, Fig. 4, washer, Fig. 5, plate 3, and shock spring, Figs. 7 and 8, plate 2, arranged (substantially as herein described,) in combination with railroad-car boxes, to be constructed and operated as herein described and set forth.

No. 52,182.—JOSEPH MCCAMMON, Dayton, Ohio.—*Barrel Head.*—January 23, 1866.—This invention consists in so forming the barrel head in connection with a metallic plate and a disk, that the head can be placed in the croze of the barrel or taken out without the removal of the upper hoops.

Claim.—The metallic piece C and disk D, used in connection with the barrel head in two parts, as and for the purpose herein specified.

No. 52,183.—M. MCGONNIGLE, Allegheny City, Penn.—*Lock.*—January 23, 1866.—This invention is clearly described by the claim.

Claim.—The use of two bolts which answer the double purpose of bolt and guards for the keyholes, which are arranged in the lock case so as not to come opposite to each other, as herein described and set forth.

No. 52,184.—STEPHEN G. MILLS, Des Moines, Iowa.—*Cultivator.*—January 23, 1866.—This invention consists in the combination and peculiar arrangement of a pair of double plough beams, by which they may be moved both laterally and vertically when in operation.

Claim.—The arrangement of the double-shovel plough beams F, standards I, guides J, pair of chains E, wheels L, bridge M, bar O, lever N, and shifting seat R, substantially as described and represented.

No. 52,185.—ALEXANDER MITCHELL, Fredericton, New Brunswick.—*Washing Machine.*—January 23, 1866.—This invention consists in the combination of a roller covered with an elastic substance, with a hinged frame in which it is hung, with an inclined wash-board, and with springs and treadle for operating the same.

Claim.—A washing machine formed by combining the roller O, covered with India-rubber or its equivalent, with the inclined wash-board G, the frame N, the cross-piece L, the springs X and V, the rods R, and the treadle T, substantially as described and for the purpose set forth.

No. 52,186.—J. A. MONTGOMERY, Williamsport, Penn.—*Hay Fork.*—January 23, 1866.—This invention consists in the combination of devices, identified by the claim, for attaching the tines to the handle, and will be readily understood from the claim and engraving.

Claim.—The combination of the tines A, bent as described, band B, and plate E, substantially as and for the purpose described.

No. 52,187.—WILLIAM MORLEY, Rolfe, Iowa.—*Thill-holding Loop.*—January 23, 1866.—This invention consists of a metallic loop, which is provided at its top and bottom with strap guides, and on its side with fixed tongues, which engage with the suspending strap; said loop being adjustable and suspended between two parts of the suspending strap.

Claim.—A metallic thill-holding loop A A, constructed substantially as described, and the suspending of the same between two parts of a suspending strap E E, substantially in the manner and for the purpose set forth.

No. 52,188.—JOHN MUTTY, Brewer, Me.—*Feed Rollers to Circular Saws.*—January 23, 1866.—This invention consists in having a smooth roller with a groove placed in a table forward of the saw-teeth, into which groove the teeth project and the roller is revolved by a belt from the power that drives the saw.

Claim.—The grooved smooth-faced cylinder feed-roller when used singly to feed the wood to be sawed to a circular saw, and revolved by the means substantially as described and for the purposes set forth.

No. 52,189.—G. S. NEVINS, Bushnell, Ill.—*Hollow Grate Bars for Furnaces.*—January 23, 1866.—In this invention the bars are hollow, and through the hollow chambers in the ends a rod passes, secured at either end by a nut and screw; between every bar and around this rod are metallic gaskets, but so constructed that every other one is close, thus making the water which flows through the bars take a circuitous route from the reservoir to the boiler. A branch from the discharge pipe connects with the reservoir and thus prevents the bars being blown empty.

Claim.—First, in furnace and other grates, securing the ends of their bars together by means of rods passing through hollow spaces made through said bars, so as to allow the bars to expand and contract without breaking their joints, substantially as shown.

Second, in tubular grates, placing a copper gasket between adjacent bars, each alternate gasket fitting close about the rods which connect the bars to each other, so as to form a continuous water-course, substantially as shown.

Third, connecting the discharging pipe *i* of the grate with the top of the water reservoir from which the hollow bars of the grate are supplied with water, so that steam and hot water may pass over into the reservoir without obstruction, preventing the bars from becoming filled with steam and being blown empty, substantially as set forth.

No. 52,190.—W. B. NILES and S. M. GILLETT, Little York, N. Y.—*Loading Attachment to Hay Wagons.*—January 23, 1866.—This invention consists in mounting the crane upon an adjustable step, said crane being used in connection with other well known devices identified by the claim.

Claim.—The crane placed on a mounted frame A, arranged with an adjustable step so that it may be kept in a vertical position in combination with a fork N, and rope or chain M, arranged with the crane and attached to a pulley D on the axle C, to operate in a manner substantially as and for the purpose set forth.

No. 52, 191 —BUTLER G. NOBLE, New York, N. Y.—*Apparatus for Desulphurizing Ores.*—January 23, 1866.—This invention consists of a metallic vessel, lined with fire-brick and provided with an inclined grate to support the ores, and a grate to support the fuel. Below the grate which supports the fuel is a chamber into which a stream of air and steam is made to flow, the steam passing through the valve that regulates the flow of air. The gases pass from the vessel into an upright chamber, upon the top of which is a tank containing water, which escapes into said chamber through a perforated metallic plate. The water, after passing through the chamber, collects in another chamber, from whence it may be pumped back to the tank. The gases which are not absorbed by the water pass off through a pipe.

Claim.—First, the shower chamber *k*, in combination with the desulphurizing chamber *f*, substantially as and for the purposes set forth.

Second, the mode of constructing the desulphurizing chamber *f*, with the inclined grate *d* and discharge door *g*, as set forth, in combination with the shower chamber *k*, as specified.

Third, the adjustable steam tuyere, in combination with the desulphurizing vessel *a*, constructed as specified, so as to regulate the temperature as set forth.

No. 52,192.—BENJAMIN OLDFIELD, Williamsburg, N. Y.—*Looms.*—January 23, 1866; antedated January 7, 1866.—In this invention the arrangement of the shuttles is such that those which form the plain part of the fabric are driven simultaneously through the same opening in the shed, and the figuring shuttle or shuttles are moved at such intervals as the pattern may require.

Claim.—The application to a batten of two or more shuttles for plain weaving, and one or more figuring shuttles to operate in conjunction, substantially in the manner and for the purpose herein set forth.

No. 52,193.—OLIVER PEARL, Lawrence, Mass.—*Flier-boards of Spinning Frames.*—January 23, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—A flier-board occupying a position above the level of the top of the frame, or above the depression made in the top of the frame, for the purpose of preventing waste or locks of cotton from entering the nose of the flier.

No. 52,194.—MILO PECK, New Haven, Conn.—*Low-water Detectors.*—January 23, 1866.—The object of this invention is to cause an alarm to be sounded indicating a low and dangerous point of the water in the boiler. Its novelty consists in the arrangement of the double cylinder, in combination with the fusible metal and spindle.

Claim.—The arrangement of the double cylinder B D, in combination with a spindle E, and a fusible metal F, to operate substantially in the manner as herein set forth.

No. 52,195.—T. W. Peirce, Minneapolis, Minn.—*Binding Attachment to Reaping Machine.*—January 23, 1866.—This invention consists of a sectional cylinder which is opened by means of springs to receive the grain to be bound, and is closed by a reciprocating ring or cylinder enclosed within a stationary cylinder or drum, said reciprocating ring sliding over the sections of the compressing cylinder and thereby folding them into a cylindrical form, tightly compressing the gavel. A rotating rake is used in connection with the compressing cylinder to seize and discharge the gavels at regular intervals.

Claim.—First, the fixed tube V, in connection with the sliding tube W and the expanding tube B′, arranged to operate in such a manner as to compress the gavels, and admit of the bands being adjusted on them, substantially as set forth.

Second, the revolving rake C′, in combination with the tubes V W B′, substantially as and for the purpose specified.

Third, the frame N, when used in connection with the tubes V W B′ and rake C′, and operated in the manner substantially as and for the purpose set forth.

Fourth, the springs Y applied to the tube W and arranged to operate in the manner substantially as and for the purpose specified.

No. 52,196.—Victor Percheron, New York, N. Y.—*Travelling Bag.*—January 23, 1866.—This invention consists in folding crossed legs, pivoted in a frame, and thereby attached to a travelling bag; and in straps applied to said bag in combination with the folding legs.

Claim.—First, the folding crossed legs E, pivoted in a frame D, and thereby attached to a travelling bag or satchel, substantially as set forth for the purpose specified.

Second, the straps *d* applied to a travelling bag or satchel when such bag is provided with folding legs, all substantially as set forth for the purpose specified.

No. 52,197.—George R. Percy, New York, N. Y.—*Vacuum Pan for Condensing Milk and other substances.*—January 23, 1866.—This invention consists of a pan provided with a feeder, which consists of a coil of perforated pipe with a strip of serrated metal on its under side, so that the liquid will be fed in drops or in a thin sheet upon the coil of heating pipe, which is also provided with strips of serrated metal. The coil is heated by means of steam or hot air.

Claim.—First, the combination of the shell A with the series of pipes *f f*, the feeder *a*, the connecting tubes *g*, substantially as described, in vacuo.

Second, the combination of the feeder *a* with the shell A, whether with or without the pipes *f f*, when used in vacuo.

Third, the combination of the ordinary vacuum condensing pan, with the percolating, trickling, and heating apparatus, as above described.

Fourth, the introduction into a vacuum pan of liquids in drops, small particles or thin sheets, when for the purpose of evaporation or condensation in vacuo, and when used in combination with a direct heating surface and not one formed by radiation, and the liquor to be condensed or evaporated running or trickling over such heated surface.

Fifth, the method or mode, as above described, of evaporating and condensing in vacuum at low temperatures.

Sixth, the percolating, separating, descerption, and disintegration of substances, as above described.

Seventh, the production and application of a uniform rate of temperature in and to substances while undergoing evaporation and condensation in vacuo, by means of their running or trickling over a surface of pipes or metal heated by the direct application of steam, hot air, or hot fluids to said pipes or metal above described.

No. 52,198.—David L. Pettigrew, assignor to himself and Jacob Smith, Claremont, N. H.—*Sheep Rack.*—January 23, 1866.—This invention consists of a light, cheap, and portable rack for feeding sheep, so constructed as to secure to each sheep his share of the provender; it also insures great economy in the use of both hay and grain.

Claim.—The above-described rack for feeding sheep as a new article of manufacture, substantially as set forth.

No. 52,199.—Thomas J. Price, Auburn, Ky.—*Straw Cutter.*—January 23, 1866.—This invention consists in the combination and arrangement of the circular cutters, apron or hinged rack, and fingers, in such a manner as to admit of the rack containing the straw, hay, &c., being adjusted towards the cutters, while the fingers clean and protect said cutters from being clogged up.

Claim.—First, the series of circular revolving knives C and hinged rack or apron J, for the purpose set forth.

Second, in the described combination, the series of circular revolving knives C, hinged rack or apron J, and fingers L.

No. 52,200.—Thomas Prince, Roxbury, Mass.—*Support for Flower Pots.*—January 23, 1866.—This invention consists in a novel manner of arranging and supporting one or more

flower pots, intended especially for holding hanging or drooping flowers. A rod runs through the centre of the pot, which supports it.

Claim.—Arranging a number of flower pots B upon a rod A passing through them, substantially as and for the purpose specified.

No. 52,201.—FRANCIS B. PYE, Trenton, N. J.—*Knob Latch.*—January 23, 1866.—In this invention the latch bolt rests upon a horizontal bar, one end of which is pivoted to the lock case, while the other, supported by a spring, protrudes through an opening in the edge of the case, so that the bolt can be disengaged from the arms of the hub by simply depressing the end of the bar.

Claim.—First, the lever F, with its sharp point *d*, of oscillation resting in an angle as shown and described, and so constructed as to pass in front of the hub D, instead of in rear of the same, as and for the purpose set forth.

Second, the reversible latch bolt C, arranged to operate in connection with the lever *h* and spring *j*, or their equivalents, as herein shown and described.

Third, the spindle reduced as shown at *y*, of Fig. 8, for the purpose of causing it to yield instead of the interior portions of the lock, and thus prevent burglars or others from forcing open the lock by means of the knob or spindle.

Fourth, a bolt for locks having its body corrugated as shown in Figs. 2 and 5, for the purpose of making it strong and light.

Fifth, forming the lock bolt by casting the head E′ with the ridge *x* and pins *m* and *n* on the flat bar E, as herein shown and described.

No. 52,202.—A. L. RAND, Chicago, Ill.—*Wine Press.*—January 23, 1866.—This invention consists of a box with perforated plates on the sides thereof and bottom, under which are rollers, so that a screw rod attached to a cross-bar underneath the bottom and passing to the top, with a screw nut on the top, can be made to operate on the fruit in the box. It also consists in its adaptability to being changed to press lard, and has a drawer underneath the press bottom to receive the lard or liquor, or it can be operated to press with the screw by removing the same and using a hand follower in the box.

Claim.—First, the box A, provided with the perforated plates A′ and rollers *e*, in combination with the drawer B, all arranged and operating as and for the purpose set forth.

Second, the follower D, having its under face grooved as shown, and provided with the tubular handle E, as herein set forth.

Third, the screw *a*, bar *s*, and rod *c*, all arranged as shown, and made detachable for the purpose of converting the press from a hand to a power press, and vice versa, at will, substantially as herein described.

No. 52,203.—JOHN REDLEIN, Brooklyn, N. Y.—*Cider Mill.*—January 23, 1866.—The invention consists in placing a triangular scraper underneath the endless apron, so as to scrape off all the pomace from the apron, and is made in this form so as to be capable of being turned to present different sides to the apron.

Claim.—The scraper E, made three sided and applied in such a way to the endless apron *b* as to enable the position of its edges to be changed, substantially as set forth for the purpose specified.

No. 52,204.—S. D. RICHARDSON and T. S. HUGHES, Syracuse, N. Y.—*Pump Filter.*—January 23, 1866.—In this invention, the piston being depressed lower than its ordinary working range, presses a rod, having a valve at its lower extremity, held to position by a spring, and this permits the escape of all the water, sand, &c., in the filter chamber, which is below the piston chamber and foot valve. The induction pipe from the well ascends some distance up into the filter chamber, and has a caged ball-valve at its mouth, and above this a disk of woven wire, to permit the ascent of the water while other matters gravitate to the bottom of the filter chamber to escape as already described.

Claim.—First, the tube A, running up into the chamber B, with the parts *v*, *u*, *f*, *r*, and *o* attached thereto.

Second, the same parts described in said claim, in combination with any form of pump in common use, made and operated substantially as and for the purpose described.

No. 52,205.—DAVID T. RICKEY, Marshalltown, Iowa.—*Grape Trellis.*—January 23, 1866.—This invention consists in a new and useful improvement on the grape trellis, by which grape-vines are lowered to the ground in the fall, so that they may be covered and protected from the frosts of winter, and raised to an upright position in the spring, thus obviating the necessity of removing the grape-vines from the trellis, and protecting them from the weather.

Claim.—The hinge joint F, as applied to the grape trellis, substantially as herein described.

No. 52,206.—ALEXANDER K. RIDER, Hydeville, Vt.—*Steam Blower.*—January 23, 1866.—This invention consists in combining a pipe or pipes with a fan blower in such a manner that the issuing jet of steam shall impinge upon the buckets of the fan, thus causing a rotary motion, which causes a current of air mingled with steam to be driven into the furnace of a steam boiler for the purpose of aiding in the combustion of the fuel.

Claim.—So applying one or more steam pipes in connection with a rotary fan blower, that the rotary motion will be produced by the impringement of steam upon its fans, and that such steam, mixing with or being diffused among the air entering the blower, will be delivered along with said air into a furnace, substantially as herein described.

No. 52,207.—THOMAS L. ROBERTS, Indianapolis, Ind.—*Mill for Grinding Sugar Cane.*—January 23, 1866.—This invention consists in providing for the lifting out of the frame the crushing roller by means of handles on rods that are attached to the journal boxes, and in a peculiar scraper between the two lower rollers.

Claim.—First, so constructing a sugar mill that the top roll may be lifted out with the journal boxes by means of the handles R, the journal boxes operating in the opening G of the frame E, substantially in the manner and for the purposes set forth.

Second, the adjustment of the scraper L M S, when operated in the slot T, by means of the set plate O and set screw N, substantially as set forth.

No. 52,208.—JAMES ROBERTSON, East Boston, Mass.—*Wine Press.*—January 23, 1866.—This invention consists of a screw passing through a cross-head, which is removable by means of shackle hinges upon the posts, and a cylinder with two movable bottoms, one perforated and the other grooved so as to lead the juice centrally to the exit spout, the cylinder having packing around its lower end to prevent the juice from flowing up around the cylinder of the bottom.

Claim.—A portable wine press for family use, having a cross-head *a*, pillars *b b*, with shackle hinges, a cylinder with India-rubber bottom and gasket as described, together with two removable bottoms, one of which is perforated and the other grooved, and the conduit therefrom, all arranged and combined substantially as herein specified.

No. 52,209.—OTTO ROTTON, Brooklyn, N. Y.—*Obtaining Oil from Wells.*—January 23, 1866.—This invention will be understood by reference to the claim.

Claim.—An induction pipe for introducing water into the wheel to force up the oil, either by the static pressure of the water in said pipe, or by pressure mechanically applied in combination with a vertically adjustable eduction pipe for the discharge of oil from the well, substantially as and for the purposes herein set forth.

No. 52,210.—JOSEPH RYAN, St. Louis, Mo.—*Hydraulic Jack.*—January 23, 1866.—In this invention the cylinder is seated upon a shaft journalled upon uprights at the sides of a base frame. A brace hinged to each side of the cylinder near the top has its other end hinged to a sliding carriage, the movement of which determines the upright or inclined position of the cylinder. At the other end of the cylinder is a reservoir, a pipe from which leads to the bottom of the pump. The eduction pipe from the pump to the base of the jack is jointed so as to be adapted to the various positions of the cylinder.

Claim.—First, the combination of a hydraulic cylinder E with a suitable base or bed plate D, by means of a hinged support E′, substantially in the manner and for the purpose herein set forth.

Second, the combination of an adjustable brace M with a hydraulic cylinder E, and base or supporting frame D, for the purpose of staying the cylinder at any desired angle of inclination, substantially in the manner herein described.

Third, the combination of a suitable force pump B, reservoir C, and hydraulic cylinder E, with each other and with a single supporting frame or base D, substantially in the manner and for the purpose herein set forth.

Fourth, in combining and connecting a suitable force pump B, with an adjustable hydraulic cylinder E, by means of a jointed flexible pipe *p*, substantially in the manner and for the purpose herein set forth.

No. 52,211.—CHARLES C. SCHMITT, New York, N. Y.—*Library Step Ladder.*—January 23, 1866.—This invention consists in attaching to a frame a series of steps in such a manner that they can be folded up within the frame.

Claim.—The arrangement of a series of steps within any suitable frame, substantially as herein described and so as to operate as specified.

No. 52,212.—GEORGE B. SENNETT and HENRY ESSEX, Meadville, Penn.—*Skate.*—January 23, 1866.—This invention consists in making the runner and foot-rest, and also the heel fastening, of one piece of steel without weld, rivet, or joint.

Claim.—First, the making of the foot-rest and runner of a skate without either weld, rivet, or joint, out of one and the same piece of steel, substantially in the manner described.

Second, the forming of the heel fastening or screw from one and the same piece of steel of which the runner and the foot-rest of the skate are made, substantially as described.

No. 52,213.—THOMAS N. SHERWOOD, Dunlapsville, Ind.—*Cultivator.*—January 23, 1866.—This invention consists in the peculiar connection of the draught pole with the frame of the machine, allowing the ploughs to have a vertical motion when desired, the arrange-

ment of the adjustable plough beams, and the use of detachable rollers at the front of the cultivator.

Claim.—First, the lever N, placed on the rear part of the draught pole L, and connected by a rod O to a lever E′ at the rear of the bar E, in combination with a staple M attached to bar E, passing through the draught pole to receive the front end of lever M, and the connecting of the rear end of the draught pole to the bar E by a hook *e*, substantially as and for the purpose herein set forth.

Second, the rollers K K, when applied to the device in front of the ploughs, substantially as and for the purpose set forth.

Third, the combination of the adjustable plough beams B B C C, rollers K K, wheels P P, and draught pole L, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 52,214.—GEORGE SHONE, Carondelet, Mo.—*Pipe Coupling.*—January 23, 1866.—This invention consists in forming the key way with a double inclined surface so that the key pressure will take upon the axial line of the coupling, for the purpose of insuring a tight joint and rendering the efficiency of the coupling independent of the skill of the operator.

Claim.—The double inclined surface bed of the key way for the purpose of taking the key pressure upon the axial line of the coupling, thus insuring a tight joint and making the efficiency of the coupling independent of the skill of the operator, as hereinbefore mentioned.

No. 52,215.—JOHN H. SILKMAN, Milwaukee, Wis.—*Wood-splitting Machine.*—January 23, 1866.—This invention consists in the employment of a helve or working beam vibrating on a central axis and fulcrum, in combination with two axes or wedges, one to be attached to the helve or working beam on either side of the axis or fulcrum, by means of which a double action is obtained in the machine in the process of splitting fire-wood.

Claim.—In wood-splitting machines the arrangement of the working beam or helve, oscillating centrally on pivot *j*, in post H, between two splitting axes that are firmly fixed to said beam, when said beam is extended beyond one of the axes to receive the operating power, substantially as herein described.

No. 52,216.—JOHN H. SILKMAN, Milwaukee, Wis.—*Axe for Wood-splitting Machines.*—January 23, 1866.—This invention consists in making the splitting axe in three parts, the edge of steel and the two cheeks of cast-iron and bolted together, giving a form better adapted to splitting wood.

Claim.—The splitting axe or wedge, when constructed as described, of parts A A and B, and having the form substantially as described.

No. 52,217.—JAMES B. SKINNER, Rockford, Ill.—*Cultivator.*—January 23, 1866.—This invention consists in extending the side pieces of the main frame forward so as to constitute a tongue, and rearward so as to support the driver's seat and plough standards, and in so arranging the parts as by means of levers to give the ploughs a lateral motion when desired, as well as to raise them out of the ground.

Claim.—First, the frame of a cultivator so constructed of two longitudinal pieces as to have its front constitute the tongue, while its rear extends behind the axle to support the driver's seat and ploughs, substantially as set forth.

Second, uniting the frame to the axle by levers arranged as described, in combination with the mechanism, substantially as described, for rendering the frame rigid when raised to its greatest height, for the purpose set forth.

Third, the combination of the standards with the frame, the bent levers, and the foot levers, when arranged and operating substantially as and for the purpose set forth.

Fourth, the combination of the standards with the frame so that they shall be raised and lowered with it, and be capable of a sidewise and pivotal movement, and these with the mechanism, substantially as described, for locking the standards rigidly when adjusted for the purpose set forth.

Fifth, in combination with the standards 3 and 4, the cross-bar I, ratchet bar M, and the catch plate *i*, and the catch hooks 13 and 14, arranged and operating as and for the purpose set forth.

Sixth, the combination of the adjustable mould boards R, with the standards and ploughs, substantially in the manner and for the purpose set forth.

Seventh, the combination of the doubletree N with the main frame and with the levers P and P′, arranged and operating substantially as described, for the purpose set forth.

No. 52,218.—ELI SMITH, Windsor, Vt.—*Saw Set.*—January 23, 1866.—This invention consists of a vertical plate, the face of which presents a series of recesses which contain the several devices, viz., two bars fitted to slide one upon the other centrally and vertically, which are used alternately as anvils, against which the tooth rests; two sliding, horizontal punches near the lower edge of the plate; two vertical punches, which project above the plate and two sections which communicate the force produced by blows struck upon the ends of the vertical punches to the horizontal punches, the latter being used alternately with one or

the other of the vertical bars or anvils. A cap plate secured against the face of the vertical plate holds all parts in their proper position.

Claim.—The combination of the pieces C, or C′ F, or F′ E, or E′ and G, or G′, with a suitable frame or case B, substantially in the manner and for the purpose described.

No. 52,219.—H. B. Smith, Lowell, Mass.—*Tenoning Machine.*—January 23, 1866.—This invention consists in so arranging the cutter heads that they can be adjusted to any distance apart relatively, and when that is done they can both be moved up or down without changing their relative position.

Claim.—First, so arranging the cutter heads of a wood-tenoning machine, and upon the frame of the same, that while they can be set or adjusted to any desired distance apart, according to the thickness of the tenon to be cut, they can be, after such adjustment, either raised or lowered, as may be desired, and thus brought to any position with regard to the board or wood to be operated upon, without in the least degree disturbing their relative position with regard to each other, substantially in the manner described.

Also, hanging the cutter heads in sliding frames E and E^2 of the machine, each having a screw shaft R and *u* with pinions *c* and *d*, in combination with the swinging arm V and pinion gear *f*, arranged with regard to the said pinions *c* and *d*, and all arranged together so as to operate substantially in the manner and for the purpose specified.

No. 52,220.—Wm. T. Smyth, Philadelphia, Penn.—*Scrubbing Machine.*—January 23, 1866.—This invention consists of a suitable frame with several brushes attached, the whole arranged with wheels so that it can be propelled readily over a floor or pavement while the brushes are operated.

Claim.—The combination of the brushes C with the top piece A and wheeled bed-piece, constructed and operating substantially as described and for the purpose set forth.

No. 52,221.—Robert Stewart, Elmira, N. Y.—*Cut-off Valves.*—January 23, 1866.—This invention consists in the combination of a weighted yoke with the arms of a rock-shaft, by which the weighted yoke is elevated, and an air-vessel for the purpose of preventing the too severe concussion of the weighted yoke as it returns to its normal position. It further consists in the combination of an operating crank with the pawls which move the valve. These pawls engage with the crank and move the valve and elevate the weighted yoke, and when this office has been performed they are disengaged, by coming in contact with inclined surfaces which disengage the pawl from the rock-shaft, and allow the weighted yoke to return the valve and rock-shaft to their original position ready for the return stroke of the engine.

Claim.—First, the valve crank C provided with corners *x* and arms *a*, substantially as described, when used in combination with the pawls G G′, or their equivalent, and the weighted yoke D *d*, or its equivalent, substantially as and for the purposes specified.

Second, the weighted yoke *d* D D^1 D^2, constructed and operating substantially as described, and in combination with the arms *a*, socket E, and air chamber D^3, substantially as specified.

Third, the operating crank F F^1 F^2, constructed and operating substantially as specified, in combination with the pawls G G′ and valve crank C, for the purposes specified.

Fourth, the pawls G G′, constructed and operating substantially as described in combination with the regulating yoke H *h*, valve crank C, and operating crank F F^1 F^2, substantially as and for the purposes specified.

Fifth, the regulating yoke H *h*, constructed and operating substantially as specified, in combination with the pawls G *o* G′ *o*, substantially as and for the purposes specified.

Sixth, the combined construction and arrangement of the weighted yoke D, and valve crank C, for the purpose of closing the ports, substantially as described.

Seventh, the arrangement of all the parts above described.

No. 52,222.—Lafayette Strickland, Talleyrand, Iowa.—*Cultivator Plough.*—January 23, 1866.—This invention consists in attaching to the plough frames upright bars connected at their upper ends to handles, which latter are attached at their front ends to a framing by means of staple joints. To the inner surfaces of the upright bars are secured adjustable plates in connection with guides, by which the depth of penetration of the ploughs in the ground may be regulated.

Claim.—The upright bars H′ attached to the plough frames E E and connected at their upper ends to handles K, the front ends of which, as well as the front ends of the plough frames, are connected to the framing D by staple joints, substantially as and for the purpose specified.

Also, the adjustable plates N, secured to the inner surfaces of the bars H′ in connection with the eyes or guides *f*, arranged as shown, to regulate the depth of the penetration of the ploughs in the earth, as set forth.

Also, the shoulders *i*, attached to the rear sides of the bars H′, in connection with the spring catches *j* on the framing D, for the purpose of holding, when required, the ploughs above the surface of the earth, substantially as set forth.

No. 52,223 —MARCUS A. SUNDERLAND, Utica, N. Y.—*Instrument for Cutting Oil-cloth.*—January 23, 1866.—This invention will be readily understood by reference to the claim and engraving.

Claim.—The above-described foot A, knife B, and caster E, the whole constructed and operated as and for the purposes above set forth.

No. 52,224.—FREDERICK SWATZEL, Germantown, Ohio.—*Water Wheel.*—January 23, 1866.—This invention of a horizontal wheel adapted to receive the water tangentially from a continuous scroll spout which may extend entirely round the wheel. The main parts of the buckets are perpendicular between two horizontal rims, and have vertical flanges extending beyond the periphery of the lower rim, and an opening inward permitting the flow of the water downward and outward again through a spout-like extension of the bucket. There is a supplementary rim of larger size having open buckets perpendicular between the upper of the smaller rims and this supplementary rim, these buckets reaching further out than the rest of the wheel.

Claim.—First, the buckets A A′ A″, in combination with the inclined or curved spout *g*, operating in the manner substantially as described.

Second, the auxiliary buckets *e e*, in combination with the wheel, as described.

No. 52,225.—JOSEPH TEDFORD, Hartford, Iowa —*Combined Seed Drill.*—January 23, 1866.—This invention consists of a combined seed drill and rotary digger, the latter running in front of the drills, digs up the earth and prepares it for the grain; the drills follow after the digger and deposit the grain in the earth.

Claim.—The combination and arrangement of the rotary digger A, seed drill D, hopper L, roller E, frame G, and levers N R R, as and for the objects herein set forth.

No. 52,226.—CHAS. F. TOLL, Boston, Mass.—*Lock.*—January 23, 1866.—This invention consists in an arrangement of a series of stop pins in each section of a transversely divided cylinder. The lower or inner section engages by a spur with the lock bolt, and its pins rest upon spiral springs coiled around pieces of wire of lengths respectively corresponding to stop pins of unequal length; said wires serving to prevent the pins from being pressed in further than is required to release the outer section. The key plate, a circular plate with projecting pins corresponding in number and position with the holes and pins in the outer section, is, when in use, attached to the latter by a thumb-screw.

Claim.—The combination of the stopping pin *i*, with the spring *h* and the pistons *f g*, when applied to the two cylinders C E, arranged in manner and to operate together as described.

Also, the combination of the connection screws H′ I, or their equivalent, with the key H and the cylinders E C D, and the pistons *f g*, and spring or springs *h*, the whole being made and applied together, substantially as specified.

No. 52,227.—ARTHUR WADSWORTH, Newark, N. J.—*Watch.*—January 23, 1866.—This invention consists of an improved means of holding the balance spring of a watch, which allows the spring to be easily released and prevents it from being twisted.

Claim.—Holding the outer end of the hair or pendulum spring of timepieces by and between a fixed shoulder or lip and an eccentric or cam, substantially as herein described and for the purposes specified.

No. 52,228.—SIGOURNEY WALES, Boston, Mass.—*Window.*—January 23, 1866.—This invention consists in the mode of attaching sash to auxiliary stiles which move within the groove formed by the stops, and which enables the sash to be removed from said stiles without having to remove the stops. It further consists in the mode of arranging and applying elastic strips to exclude the wind, dust, &c.

Claim.—The application of the connection bar B to the sash, by means substantially as described, viz., the parts C D, whereby by a lateral and a longitudinal movement of one with respect to the other, the two parts may be either connected or disconnected, under circumstances and in the manner and for the purpose specified.

Also, the arrangement and combination of the elastic or weather strip *b* with the sash and its connection piece B, substantially as described.

Also, the combination of the flap or part *b′* with the rest of the weather strip and sash, and to operate in the recess *c*, and with respect to the socket piece I, in manner substantially as explained.

Also, the construction of the window sash, or its part B, with the recess or groove *x x′*, and with the weather strip *y* applied thereto, and so as to operate in the window frame substantially as described.

No. 52,229.—RICHARD WALKER, Batavia, N. Y.—*Carriage Seats.*—January 23, 1866.—A changeable carriage seat is hung upon arms which are hinged to the body of the carriage near its bottom, and are also hinged to the bottom of the seat. The rear end of the seat is provided with a roller which runs upon a way formed of sheet-iron placed upon a piece of

wood secured to the bottom of the carriage body. The seat is caused to rise as it moves forward and is carried by levers to the desired position where it is held by the guide irons on each side.

Claim.—The changeable carriage seat *a*, hung upon the arms *c d*, hinged near the bottom of the body of the carriage, and also hinged to the bottom of the seat, in combination with the guide irons *m m*, roller *n*, and the duplicate seat *b*, all arranged substantially as described and for the purpose set forth.

No. 52,230.—SYLVANUS WALKER, New York, N. Y.—*Self-locking Tail-board of Wagons.*—January 23, 1866.—This invention consists of a self-locking device formed of hinged curved arms which are locked by their own weight in any desired position. The said curved arms are connected by means of a rod which serves as a hinge support for strengthening the tail-board and communicating motion from one curved arm to the other, in the act of locking or unlocking.

Claim.—The combination of the hinged curved arms D D′, with the connecting rod H, operating by their own weight as a self-lock, by the notches coming in contact with the staples *e e′*, combined and arranged with a hinged tail-board, substantially as set forth.

No. 52,231.—BENJ. F. WALTON, Philadelphia, Penn.—*Lamp Wick.*—January 23, 1866.—This invention consists of fibrous strands contained within an outer covering of paper.

Claim.—A wick composed of fibrous strands contained within an outer covering of paper, as set forth.

No. 52,232.—JAMES WATT, Buffalo, N. Y.—*Valve Gear for Steam Hammer.*—January 23, 1866.—This invention consists in the combination of the bevelled arms made adjustable on the valve rod, and the tappet arm with the roller in the end thereof, with the piston rod, for the purpose of operating the valve directly by the piston rod. It further consists in a cylindrical valve forming a bearing equal or nearly so to the valve face, diametrically opposite the same, and opening a communication through the valve so that the steam may press equally on each side thereof.

Claim.—First, the bevelled arms *k k′* made adjustable on the valve rod, and the tappet arm or roller f^2, in combination with the piston rod, for the purpose of operating the steam valve, substantially as described.

Second, giving the cylindrical valve I a bearing i^2 against the valve chest opposite the posts, in combination with the passage i^3 through the valve, to produce a balanced valve as described.

No. 52,233.—M. D. WELLS, Morgantown, West Va.—*Harrow.*—January 23, 1866.—This invention consists in having the body of the harrow composed of a solid bed of either wood or metal, turned up at the front end to admit of its being drawn over the ground, and having harrow teeth fitted in it; the harrow and clod-crusher are combined. It further consists of runners attached to the body or bed of the harrow so that it can be drawn from place to place upon the runners which are upon the upper side of the harrow.

Claim.—A harrow composed of a solid body or bed A, rounded upward at its front end and having teeth B inserted in it, substantially as and for the purpose herein set forth.

Also, in combination with the body or bed A, having the teeth B inserted in it, the runners C C attached to the upper surface of A, with their rear ends projecting beyond the rear end of the harrow to form the handles, substantially as and for the purpose specified.

No. 52,234 —JOHN WENTZ, Shelby, Ohio.—*Stencil Plate.*—January 23, 1866.—This device is formed of two plates—one overlapping the other and inserted in a case or holder, so that they can readily be adjusted into and removed from the holder by simply moving them along slides which retain them in place.

Claim.—The stencil plates in combination with the holder, when constructed and arranged in the manner described, being a new article of manufacture.

No. 52,235.—J. G. WHITLOCK, New York, N. Y.—*Steam Oven.*—January 23, 1866.—This invention will be understood by reference to the claim.

Claim.—First, an oven heated by a coil of steam pipe arranged in a close coil at the lower part of the oven and in a more open coil at the upper part, so as to allow the pipes themselves to be used as shelves in baking, substantially as described and for the purpose set forth.

Second, combining with the walls of the oven and with the coil of steam pipe an inner casing or lining so arranged as to produce a circulation of heated air within the oven, substantially as described and for the purpose set forth.

No. 52,236.—CHARLES WHITTIER, Roxbury, Mass.—*Furnace Grate.*—January 23, 1866.—In this invention one or more rods pass transversely through or under a series of grate bars, the ends of which are loosely supported by a suitable frame.

Claim.—Hanging a series of grate bars loosely on one or more rods passing transversely through or under them, substantially as described, whereby the grate bars are allowed a free expansion from the centre.

No. 52,237.—Hulsey B. Wolf, Truro, Ill.—*Sorghum Cane Stripper.*—January 23, 1866.—This invention consists in the combination of an apparatus for stripping sorghum preparatory to pressing the juice from said stalks; said apparatus may consist of one, two, or more strippers.

Claim.—First, the plate A, with the spear-shaped part B, substantially as and for the purposes described.

Second, the parts A B and C, substantially as shown and described.

Third, the parts A B and D, substantially as shown and described.

Fourth, the parts A B C and D, substantially as shown and described.

No. 52,238.—J. P. Worrall, Philadelphia, Penn.—*Branding Tool.*—January 23, 1866.—This device consists of a case open at the top and bottom and bridged across its central portion, through which bridge passes a screw handle. The movable types and blanks are each provided with shoulders corresponding with shoulders on the case so that the types cannot pass through the frame, but can only be inserted or removed through the top of the case. A follower is introduced over the type and the handle; being turned, the follower is pressed upon the upper end of the types, when the tool may be heated and the branding done in the ordinary way.

Claim.—First, constructing the case A of a single piece so arranged that the follower and type can be inserted or removed by simply loosening the handle, as herein shown and described.

Second, in combination with the frame made as above described, the square-shouldered type, when arranged to operate in connection therewith, as and for the purpose set forth.

No. 52,239.—Nelson Wright, New York, N. Y.—*Photographic Apparatus.*—January 23, 1866.—The object of this invention is to construct an apparatus for making photographic pictures without a tent or dark chamber, by mechanical devices, which enable the operator to prepare the glass plate, and develop the picture without exposing it to the light during these operations.

Claim.—First, suspending the entire back of the camera, substantially as herein specified, on pivots p^*, supported upon the carriage c, which slides back and forth upon the bottom board of foundation B.

Second, in combination with the carriage I of the plate-holder, constructed with grooved sides v v, with a hollow rod w, the central rod K, constructed extending downward right through and below the hollow rod and carriage, and operating substantially as herein specified.

Third, providing the developing trays and the baths for photographic purposes with sliding covers, so applied and furnished with means of attachment to the plate holder, that the said covers may be slid off and drawn back to their places, substantially as herein described, by the application of the holder to the plate or bath, thereby allowing the plate to be transferred from the holder to the tray or bath without exposure to the light.

Fourth, furnishing the developing tray with a sight-box G, connected by means of a bellows-like extension, substantially as and for the purpose herein specified.

Fifth, furnishing the bottom of the developing tray with elastic corner pieces k k, having their upper surfaces inclined toward the glass back b', substantially as and for the purpose herein specified.

Sixth, the construction of the developing tray with one side M g', movable substantially as herein described, to provide for the cleaning.

Seventh, the elastic lining m' of the lid, in combination with the elastic lower corner pieces k' k', substantially as herein described, for the purpose of holding the plate during the developing and washing processes.

No. 52,240.—Solomon W. Young, Providence, R. I.—*Machinery for making Eyelet Blanks.*—January 23, 1866.—In this invention a horizontal rotating table, carrying four dies, passes under three punching and forming dies operated simultaneously by a central plunger, which cut out the blank and form it by three operations; the dies pass intermittingly from one punch to the other; a fourth punch on the under side of the table ejects the finished blank.

Claim.—The combination and arrangement of the four punches, 1 2 3 and c, substantially as described, with a series of four or more equiform dies, the same being constructed and operated by means substantially as described, for the purpose specified.

No. 52,241.—Henry D. Blake, assignor to P. and F. Corbin, New Britain, Conn.—*Molasses Faucets* —January 23, 1866.—This invention consists of a cut-off at the outer end of the tube, said cut-off being hinged to a projection at one side of the tube and operated by a handle extending beyond the other side. The pivot extends from the moving part and passes through a hole in the above named projection. A bent lever is arranged with one end fitting loosely on the pivot above named, and the other end pressing on the centre of the cut-off to hold it to duty, the pressure being adjusted by means of a set screw.

Claim.—The combination in a faucet of the bent or curved arm *m*, with the lever handle *c*, arranged together and operating in the manner described, and for the purpose specified.

No. 52,242.—ISAAC B. COTTRELL, assignor to himself and MARCUS D. BALL, South Orange, N. J.—*Sash Fastening.*—January 23, 1866.—This invention consists in applying, as a locking device, a weighted cam, whose face is corrugated, and which holds the sash, when opened, by contact with its adjacent side, the same cam serving to lock the lower sash, when closed, by swinging over it.

Claim.—The cams D D, mounted upon weighted shafts *e e*, so as to be operated in the manner described, and so arranged that while the two cams perform their respective functions of sustaining the upper and lower sash at any desired height, the lower cam can be made to lock the lower sash when down, as set forth.

No. 52,243.—CHARLES HENRY FORD, assignor to himself, HAYWARD HUTCHINSON, JESSE L. HUTCHINSON, and ELIAS S. HUTCHINSON, Baltimore, Md.—*Steam Generator.*—January 23, 1866.—This invention consists in placing within the water space of the boiler an adjustable displacer so arranged that the space between it and the heating surface of the boiler may be adjusted to any desired thickness, with a view of facilitating the generating of steam.

Claim —The adjustable water-displacer, adapted to be raised and lowered within a steam boiler, substantially as and for the purposes set forth.

No. 52,244.—CHARLES FORSTER, assignor to himself and ROBERT C. TOTTEN, Pittsburg, Penn.—*Lathe for Turning Spherical Shot and Shell.*—January 23, 1866.—This invention consists in the combination of the cup for holding the ball with the bridge which holds the tail stock and head stocks; also the revolving tool-stand and the sliding mandrel for holding the ball on its centre.

Claim.—First, the use of the cup *h*, in combination with the arch *z*, connecting the head stock and tail stock of the lathe, with or without the bracket *j* and screw *x'*, for securing the accurate centring of the shot or shell during the operation of turning.

Second, also the revolving slide rest *p*, operated by a worm and worm wheel, in combination with the cup *h* on the live spindle *d*, and the tapered mandrel *i*, for fitting into the fuze-hole of shells, or the bit *m*, with knife edges on its face for holding solid shot, the whole constructed, arranged, and operating substantially as hereinbefore described.

No. 52,245.—JOSEPH GRANT, assignor to himself and HENRY T. GRANT, Providence, R. I.—*Brick Machine.*—January 23, 1866.—This invention consists in placing the rollers which transmit the motion of the grooved cams, producing the dropping of the followers in different places, one-half of the rollers being placed below the other half, which allows of giving the rollers a large diameter.

Claim.—Placing the rollers *f*, which work in the cam grooves F, in different planes, substantially in the manner and for the purpose described.

No. 52,246.—A. J. GRIFFIN, Lowell, Mass., assignor to himself and WM. T. VOSE, Newtonville, Mass.—*Hydrocarbon Stove.*—January 23, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the employment or use of a water reservoir within a stove, placed in such relation with a vapor burner that the water will be vaporized, and the steam decomposed by the heat from said burner, substantially as and for the purpose herein set forth.

Second, the vaporizing chamber E, provided with partitions to form a sinuous passage substantially as and for the purpose specified.

No. 52,247.—FRANCIS H. HIGGINS, assignor to himself and ALFRED THOMSON, Bordentown, N. J.—*Screw Cutting Chuck.*—January 23, 1866.—This invention consists in making the chuck in two parts, one hinged to the other, and holding them together when closed by a spring pawl.

Claim.—The within-described cutter-head, composed of the section *a*, with its cutters, and the section *a'*, with its cutters, the latter being hinged to the former, and the whole being constructed and combined with the locking spring lever *c*, substantially as and for the purpose set forth.

No. 52,248.—HENRY S. JOSSELYN, assignor to himself and W. E. WOODWARD, Roxbury, Mass.—*Revolving Fire-arms.*—January 23, 1866.—In this invention, in place of the ordinary revolving cylinder, a revolving fluted drum is arranged, over which passes a chain of chambers linked together, and successively brought into line with the barrel by the usual revolving dog, operated by the cocking of the hammer.

Claim.—First, in fire-arms an endless chain of cartridge chambers, arranged to rotate upon an axis, which is parallel with the bore of the barrel, and which has a series of sprockets that engage with the interspaces of the chain, substantially as shown.

Second, in combination, the endless chain J of cartridge chambers, the spring latch C, and its arm *c*, and the pin E of the hammer, substantially as shown.

No. 52,249.—MILTON V. NOBLES, Rochester, N. Y., assignor to himself and J. C. NOBLES, Rushford, N. Y.—*Mode of Sinking Tubular Wells* —January 23, 1866.—This invention consists in constructing the valve or sucker box on the lower end of the pump rod of sufficient length to close all the openings in the lower end of the tube, so as to keep out sand or dirt during the sinking of the tube. When water is reached, all that is required is to attach the rod to the lever or pump handle, and draw the valve box up, so that it has its play just above the openings in the tube, and the well and pump is complete.

Claim.—In combination with an external tube furnished with a series of holes, an inner tube without the holes connected to a rod extending to the surface, by which said inner tube may be raised or lowered to cover or uncover said holes, and with a suitable pump valve, so that when water is reached it is only necessary to raise the inner tube and work it by the pump rod, and the pump is complete, substantially as described.

No. 52,250.—JOSEPH SHORT, assignor to himself, JOHN J. ECKEL, and ISAAC S. SCHUYLER, New York, N. Y.—*Process for Bleaching Fibrous Substances.*—January 23, 1866.—This invention consists in first washing the material in a solution of caustic soda or potash, chloride of sodium, or ox gall and spirits of wine; after which it is bleached in a solution of chloride of lime and sulphuric acid.

Claim.—First, the cold alkaline solution composed of the liquid potassa, spirits of ammonia, or chloride of sodium, about in the proportion specified.

Second, the bleaching of fibrous substances by first washing them in the alkaline solution, and then submerging them in the bleaching liquid, composed of the ingredients herein named, and about in the proportion as specified.

No. 52,251.—JOHN TAGGART, Roxbury, Mass., assignor to himself, J. H. LESTER, and CHARLES D. ELLIS, Boston, Mass.—*Machine for Slivering Wood.*—January 23, 1866.—This invention consists of a rotary annular plane with a series of plane bits and scoring cutters thereon, and above which is a cylinder having a series of block-holders so arranged that the blocks will fall on the annular plane after the action of each plane bit and scorer, so that the whole block will be cut and scored into fine fibres.

Claim.—The combination of the annular plane D, provided with sheet and scoring cutters, as specified, with the stationary drum G, or its equivalent, and one or more or a series of block-holders applied to such drum, substantially as described, the whole being to operate as and for the purpose set forth.

No. 52,252.—ROBERT LUKE HOWARD, London, England, and JOHN DANGLISH, Reading, England, assignors to STEUBEN T. BACON, Boston, Mass.—*Apparatus for Making Aerated Bread.*—January 23, 1866.—This invention consists of a water chamber and mixer cast in the same piece, the water chamber communicating with a tank by a suitable pipe, and the mixing chamber by means of an equilibrium pipe, and an aperture controlled by a valve. Below the mixing chamber, and secured to it by means of a flange, is a receiver communicating with the said mixing chamber by means of an aperture provided with a slide valve, which is capable of a rotary as well as reciprocating motion, by means of which any dough may be pressed out from between it and its seat. The receiver is also connected with the mixer by means of an equilibrium pipe, so that the pressure of the gas may be the same in both vessels, and allow the dough to fall into the receiver by its own gravity.

Claim.—Combining the vessels B and C, and apparatus connected therewith, substantially as herein described.

Also, the combination with a mixing vessel B, of apparatus such as is herein described and shown for mixing the dough, reference being had to figures 2 and 6.

No. 52,253.—JAMES MILLER, Upton, Canada East.—*Apparatus for Making Extracts.*—January 23, 1866.—This invention consists of an evaporator, made by interposing a cylinder between the heads of the ordinary vacuum pan used in the manufacture of sugar. The upper part of the evaporator is connected with a box by means of a pipe; said box is provided with a discharge cock, and a partition which prevents the foam from passing into the vessel; the vessel is connected with a condenser, which is provided with a discharge tube. The air is withdrawn from the condenser by means of an air pump attached to a pipe, and a stream of cold water is thrown into said condenser, above the perforated partition, through a pipe attached to a suitable force pump.

Claim.—The arrangement and combination, substantially as specified, of the elongated evaporator A, the vessel B, and the condenser F, connected as explained, and the discharge pipe *z*, the said condenser being provided with means of exhausting it of air and throwing water out of it, as and for the purpose hereinbefore explained, the whole constituting an apparatus for making bark extract as explained.

Also, the combination as well as the arrangement of the vessel C, the elongated evaporator A, the vessel B, the pipe *v*, and the condenser F.

Also, the combination and arrangement of the partition *s* with the vessel B and the elongated evaporator, arranged and applied together as explained, such vessel B being provided with an escape pipe connected with an air-exhausting pump, or with the same and a condenser, as described.

No. 52,254.—H. W. ALDEN and W. MACKAY, New York, N. Y.—*Machine for Setting and Distributing Printing Types.*—January 23, 1866.—This machine is too complicated to admit of an explanation without reference to the description and drawings.

Claim.—First, the conveyers *c d*, in combination with the links c^{16} d^{16}, constructed and operating substantially as and for the purpose set forth.

Second, giving to the conveyers a direct motion in the direction of the indicator points upon them, by means substantially such as herein described, or any other equivalent means for the purpose set forth.

Third, the method herein described of compelling the conveyers, after they have been arrested, to overtake and reassume their original position on the carrier-wheel, consisting of the lever u^{24} and studs u^{25}, as specified.

Fourth, the mechanism, substantially as set forth, consisting of the arm u^{29} and spring c^{28}, in combination with the lever u^{24}, and conveyers *c* or *d*, or any equivalent thereof, for the purpose of moving said conveyers back at the proper intervals.

Fifth, the sectional flange u^{17}, on the carrying wheel J, in combination with the pin u^{16}, projecting from the edge of the conveyers, applied and operating substantially as and for the purpose described.

Sixth, placing the excavated rim on the outside of the conveyers instead of on the inside, substantially as and for the purpose set forth.

Seventh, the rail y^{15}, applied in combination with the conveyers *c d* and sectional excavated rim m^5, substantially as described, so that free access can be had to the conveyers, and the labor of making the excavated rim is reduced.

Eighth, the projections K^{25} K^{26}, on the pusher cord K^{17}, to operate in combination with the tilting lever S^7, and spring stops S^{18} S^{19}, substantially as and for the purpose set forth.

Ninth, the arrangement of cams u^{15}, on the under surface of the carrier wheel J, to operate in combination with the levers c^{20} d^{20}, and pushers c^{24} d^{24}, substantially in the manner and for the purpose specified.

Tenth, the gripper springs c^{18} d^{18} on the conveyers, in combination with the studs u^{25} y^{31}, and with suitable mechanism for pushing the types out of the type cases or channel *a*, constructed and operating substantially as and for the purpose set forth.

Eleventh, the revolving receiver R^2, applied in combination with the carrying wheel J and conveyers *c d*, substantially in the manner herein specified, so that the conveyers can deposit their type without stopping.

Twelfth, the type levers z^3, with quadrants r^4, in combination with segments *w*43, and indicators e^7, constructed and operating substantially as and for the purpose set forth.

Thirteenth, the latch y^8, or any equivalent device, applied in combination with the type channel *a y*, and the type levers z^3, substantially as herein described, whereby the types are pressed up against the edges of the type levers, instead of pressing said levers against the types.

Fourteenth, the sliding stop c^4, in combination with the type levers z^3, and with the channel *a y*, constructed and operating substantially as and for the purpose described.

Fifteenth, the dog *u*4, or its mechanical equivalent, applied in combination with the mechanism for transmitting the set of the type levers to the indicators, in such a manner that the indicators which are not to act on a certain conveyer are positively held until the conveyer has passed.

Sixteenth, the apron h^4, and stud h^{41}, in combination with the sliding stop c^4, and type levers z^3, applied substantially as herein described, for the purpose of regulating the motion of said sliding stop, when a thin space is presented.

Seventeenth, producing the set of the one class of conveyers from the inside, and that of the other class from the outside, substantially as and for the purpose set forth.

Eighteenth, the rods m^0, with plates K^0 K^{01} on one, and indicators e^{7*} on the opposite end, substantially as described, for the purpose of transmitting the desired set from the register wheel to the indicator points of the conveyers.

No. 52,255.—JOSEPH ABBOTT, Washington, Ind.—*Metallic Hub for Vehicles* —January 30, 1866.—This invention consists in constructing the hub so that the spokes may be readily fitted into it and firmly secured in position when fitted in, and so that a defective spoke may be easily removed and replaced by a new one when necessary. Provision is made for the proper lubrication of the spindle or arm of the axle, and for the exclusion of dust therefrom.

Claim.—First, the two-part body C, provided with lips *d d'* to form mortises, and employed in combination with the pipe A, shoulder B, and screw cap D, as and for the purposes specified.

Second, the oil cup E, provided with a faucet F, and communicating with the interior of the pipe or box A, substantially as and for the purpose set forth.

Third, the recess *h* in the pipe or box A, when used in combination with the oil cup E and faucet F, substantially as and for the purpose specified.

No. 52,256.—J. M. ARMOUR, Craftsbury, Vt.—*Knitting Machine Needle.*—January 30, 1866.—This invention will be fully understood by reference to the claim and engravings.

Claim.—First, the needle, provided with the hook *a*, in combination with the pivoted stitch holder *b*, having its front end arranged to lay in the recess in the shank of the needle

when depressed, and to come flush with the upper surface of the hook *a*, when raised, as shown in Fig. 3.

Second, in combination with the needle and the pivoted stitch holder *b*, as above described, the spring *o* to operate the latter, as shown and described.

Third, operating the needle and stitch holder by arranging them to move or slide longitudinally, and having the latter impinge against a cam or fixed piece, as shown in Figs. 2 and 3, as herein described.

No. 52,257.—W. B. BARTRAM, Norwalk, Conn.—*Mode of Attaching Casters to Furniture.*—January 30, 1866.—This invention consists in applying rollers to the feet of furniture legs, so that the said rollers shall not touch the floor while the article of furniture is standing with the feet of all its legs thereon, but only when one side is raised.

Claim.—Applying rollers or casters to the feet of furniture legs, so that the said rollers or casters shall not touch the floor while the article of furniture is standing with the feet of all its legs thereon, but only when one side or end is raised up as described.

No. 52,258.—FORDYCE BEALS, New Haven, Conn.—*Breech-loading Fire-arms.*—January 30, 1866.—This invention consists in a novel manner of extracting cartridge shell from breech-loading fire-arms, by mean of a hook placed over the striking point of the hammer, which withdraws the shell when the hammer is cocked.

Claim.—Withdrawing a cartridge or spent shell by means of the hammer, constructed substantially as specified.

No. 52,259.—MARTIN BELL, Sabbath Rest, Penn.—*Water Wheel.*—January 30, 1866.—In this invention a vertical wheel receives its water a little past the meridian where the sliding arms begin to protrude to receive the force of the water, and before the arm becomes vertical; it extends all the way to the inner periphery of an apron which confines all the water behind the arm or bucket, under the centre of the wheel; the apron enlarges its diameter, and it ascends somewhat in the rear, whence it flows out; the sliding arms having friction rollers to facilitate their movement, which is directed by an interior arrangement of cams.

Claim.—A water wheel provided with buckets arranged or connected in pairs so as to move or slide in a direction transverse with the wheel shaft, in combination with friction rollers and cams or their equivalents for operating or sliding the buckets, and an apron which partially encompasses the wheel, substantially as set forth.

No. 52,260.—GEORGE and WILLIAM BENCH, Auburn, N. Y.—*Reach for Lumber Wagons.*—January 30, 1866.—By this invention the wagoner can increase or diminish the distance between the front and rear axles, a subreach, attached to the front axles, being held to the short reach by means of a loop, and always ready to be used when required.

Claim.—The combination and arrangement of the short reach B, with subreach C, socket F, and loop G, constructed substantially as described and for the purpose set forth.

No. 52,261.—HORATIO R. BODINE, Falls Township, Ohio.—*Machine for Making Pottery Ware.*—January 30, 1866 —This invention consists in a machine for making pottery ware by hand power, by the application of a toggle-joint power to a movable bottom, and as the plunger enters the clay, it is confined at the sides, and pressed down into the clay, forming the shape required.

Claim.—The mode of pressing clay into the forms of vessels, which mode consists in the application of the toggle-joint power and the removing of the clay from under the plunger by a movable bottom projecting up in the mould.

Also, the mode of freeing the piece from the plunger by moving a wire and cutters around the plunger.

No. 52,262.—ELIAS BROWN, Wappinger's Falls, N. Y.—*Comb.*—January 30, 1866.—This invention will be clearly understood by reference to the claim and engraving.

Claim.—As a new article of manufacture, a comb made with metallic strengthening strips inserted in grooves in the sides of the comb, substantially as described and represented.

No. 52,263.—HENRY BUCK, Harrisburg, Penn.—*Broom Head.*—January 30, 1866.—This invention consists in forming the socket or head of one piece of metal, and securing the same and the broom corn, by elastic metal arms and clamping bars.

Claim.—The combination with the socket B of the elastic arms D D, and clamping bars F F, when said bars are arranged so as to project below the socket, as and for the purpose specified.

No. 52,264.—WILLIAM H. BURKHART, Bucyrus, Ohio.—*Harvesting Machine.*—January 30, 1866.—This invention relates to the construction of the main and coupling frames, and to the manner of uniting the said frames.

Claim.—First, pivoting the ends of the rectangular finger-beam brace C to the frame of the machine, substantially in the manner shown and described, so that the axes of motion of

these ends, or pivots, will coincide with each other, and admit of the finger-beam being elevated or depressed bodily.

Second, the concave guard *d*, constructed with the oblique bearing *d'*, and formed upon the front part of the frame A, in combination with the brace or coupling C, constructed with an oblique journal to work in bearing *d'*, substantially as described.

Third, the construction of the frame A, in the manner represented in Fig. 5, and as herein described, for the purpose set forth.

Fourth, the construction of the brace or coupling arm C C, as represented in Fig. 4, and as herein described, for the purpose set forth.

No. 52,265.—GEORGE G. CAMPBELL, Janesville, Wis.—*Washing Machine.*—January 30, 1866.—This invention consists in the combination of the corrugated bottom and rotary presser, and operated as shown in the claim and engraving.

Claim.—The combination of the corrugated bottom R and rotary rubber or presser M, when the latter is constructed with the radial or parallel bars O and joint N and operated by the vibrating segmental geared lever F, substantially as and for the purpose set forth.

No. 52,266.—GEORGE G. CARVER, Roxbury, Mass.—*Flour Sifter and Measure.*—January 30, 1866.—This invention consists in combining with a suitable flour sifter a sliding scale which will indicate the quantity of flour, by quarts and pints, in the sifter.

Claim.—A sliding scale to indicate the quantity of flour as described, in combination with a flour sifter.

No. 52,267.—MELVIN C. CHAMBERLIN, Warsaw, N. Y.—*Earth Borer.*—January 30, 1866. This invention consists in attaching to the lower end of the shaft, on opposite sides thereof, knives, curving outward, having on their lower ends horizontal disks which lap one over the other, and close the opening of the tube, in withdrawing the tool and thus removing the earth bored from the chamber.

Claim.—The combination of the shaft B, the knives C C, together with the hollow cylinder A, constructed and used as and for the purpose herein set forth.

No. 52,268.—NATHAN CHAPMAN, Milford, Mass.—*Churns.*—January 30, 1866.—This invention consists of a stopper made of yielding material, such as wood, and having a conical end, which presses tightly against the inside of the neck of the bottle, when the stopper is in place. The stopper is secured in the bottle by means of a screw, which enters corresponding screw-threads cut in the neck of the bottle. The conical part of the stopper may be covered with tin foil, when the bottle is used to hold any liquid that would act injuriously upon the material of which the stopper is made.

Claim.—A horizontal dash shaft, hollow, with hollow paddles open at their outer ends, and communicating with the hole in the shaft, in combination with a cup or tube at the end of the shaft to supply air to the shaft and paddles when the churn is in operation as described.

No. 52,269.—RICHARD S. CONNELLY, Johnsonville, N. Y.—*Bottle Stopper.*—January 30, 1866.—This invention relates to stoppers used for bottles, jars, &c., in which liquids or other materials are kept, from which it is necessary that the air should be entirely excluded, and consists in the use of a screw stopper made of wood or other material, one portion of which stopple is made of a conical or tapering shape, in combination with a screw socket, having a corresponding portion of the same to that of the stopper made of a tapering or conical shape, so that when the stopper is screwed into the same it can come to a perfectly tight and close bearing and joint therewith.

Claim.—First, forming within the neck of a bottle, can, jar, jug, or other similar articles, a screw socket or opening, having a portion of the same either above or below the screw-thread, made of a smooth conical shape, substantially as herein described, and for the purpose specified.

Second, a stopper made of wood or any other suitable material, having a corresponding shape to the screw socket formed in the bottle, jar, can, jug, or other similar article, substantially as and for the purpose specified.

Third, capping or covering the conical portion of the stopper, or covering the corresponding part of the screw-socket with India-rubber, tin-foil, or other suitable elastic or flexible material, substantially as and for the purpose described.

Fourth, the combination of a screw stopper having the general shape and form, and either with or without a yielding cap-piece or covering, with a corresponding-shaped screw socket in the neck of the bottle, can, jar, or other similar article, substantially as and for the purpose hereinabove set forth.

No. 52,270.—JOHN E. CRANE, Lowell, Mass.—*Screens for Wool Dryers.*—January 30, 1866; antedated November 27, 1865.—This invention consists in the wires being interwoven to form the screen first subjected to a solution of sulphate of copper, then smoothed, then passed through melted tin, zinc, or other non-corrosive and protecting metal, and then again polished or smoothed.

Claim.—The use of a screen with a wool dryer when the said screen has been manufactured, substantially as herein set forth, for the purpose of protecting it from the action of wet or dampness in the wool, and so as to prevent the wool from adhering to the screen.

No. 52,271.—JOHN CROWNER, Wellsville, N. Y.—*Stump Extractor.*—January 30, 1866.—This invention will be fully understood by reference to the claim and engravings.

Claim.—The right and left-hand screw shaft A, arranged with nuts applied to axles or other moving parts, in connection with rods, chains, or other equivalent means, to anchor the device, and attach or apply the same to the stump, substantially as set forth.

Also, the drum G applied to the screw shaft A, as shown, and having a rope or chain attached to it, for the purpose of communicating motion to the screw shaft by a draught animal.

Also, the gearing I J, and support L, in combination with the drum G and screw shaft A, substantially as and for the purpose specified.

No. 52,272.—JACOB DODDER, Washington, Iowa.—*Churns.*—January 30, 1866.—This invention consists in the arrangement of an upright shaft with wings or blades, and wheel, with studs inserted, and all arranged so as to force the butter downwards to the bottom of the churn.

Claim.—The arrangement of the propelling blades *g* and wheel *h* on a vertical shaft, and within a vertical or upright churn, substantially as herein and for the purposes set forth, and in combination with said blades and wheel, the studs *i* and strips *j*, as described.

No. 52,273.—W. M., E. P. and ELLIS DOTY, Janesville, Wis.—*Washing Machine and Churn Power.*—January 30, 1866.—This invention consists of a vibrating presser, which is used to produce the requisite action on the clothes to be washed. This presser is suspended from pivots, on which it is firmly keyed, and which is subjected to the action of two coiled springs connected to them on the opposite sides of their bearings, and arranged in such a manner that they may affect each other's lateral pressure, and consequently relieve the friction on the pins. The handle or frame which serves to operate the presser, forms a convenient churn power, which, when attached to a churn-dasher, greatly facilitates the operation of the churn.

Claim.—First, the arrangement of springs *c c'* on opposite ends of the fulcrum pins *a* of the presser, substantially as and for the purpose described.

Second, the swivel bar *d* on the top edge of the presser, constructed and operating substantially as and for the purpose set forth.

Third, the described combination with the churn and wash tub of the spring-lever frame D, for the purpose set forth.

No. 52,274.—A. D. DREW, Dixon, Ill.—*Cutting Gaiter Boots.*—January 30, 1866.—This invention consists in cutting the upper in one piece, with lips, for covering the openings left for convenience in putting on the gaiter.

Claim.—Cutting the gaiter upper in one piece with lips, one or more, for covering the openings left for convenience in putting on the gaiter, substantially as described, and for the purpose set forth.

No. 52,275.—S. R. DUMMER, New York, N. Y.—*Beater Press.*—January 30, 1866.—This invention will be fully understood by reference to the claim and engravings.

Claim.—First, providing the sides of the press with openings which admit of the hooks slipping away from the weight so as to disengage the latter or pass it, as the case may be.

Second, the arrangement of the endless chains or belts H H, having hooks L L, and drop weight G upon and within a suitable upright box or casing A, having openings P and R at proper points of its sides, against which the chain hooks bear, substantially as herein described, and so as to operate in the manner specified.

Third, so arranging the spring catches *b b*, by which the drop weight is held elevated, with regard to any one of the openings in the press box for the escape of the chain hooks from the drop, that, when engaged with the weight to retain it in position, the said hooks can freely pass by the weight, thus not necessitating the stopping of the motion of the chains, substantially as described.

Fourth, the arrangement of the mechanism for disengaging the lower pawls *p p*, consisting of the cords *t t*, connected to the rock shafts *p' p'*, operated as described.

Fifth, the arrangement of the cords *f f*, pulleys *d d*, and rock shafts *p'' p''*, for the disengagement of the upper pawls *b b* to release the weight, substantially as described and represented.

Sixth, forming grooves or recesses in the striking surface of the drop weight for receiving the wooden cleats or strips, such as are used in the baling of hay, which grooves are of such depth that the cleats will not project beyond the face of the drop, and have any suitable arrangement of clutches for holding the said cleats therein, substantially as and for the purpose described.

No. 52,276.—ELIJAH F. DUNNAWAY, Indianapolis, Ind.—*Machine for Wiring Blind Slats.*—January 30, 1866.—This invention consists in so arranging the machine that the

staples to be driven into the slat slides to the driver by its gravity, and the action of a spring on the staple bar, which is operated upon by the driver on its return stroke, in combination with other devices for holding and feeding the slat to the machine.

Claim.—The arrangement and construction of the devices E F G M N R and P, when arranged and combined as herein described, and for the purposes set forth.

No. 52,277.—SOLOMON B. ELLITHORPE, New York, N. Y.—*Refrigerator and Condenser.*—January 30, 1866.—This invention consists of two vessels, placed one within the other, leaving a space between their bottoms and sides. Each vessel is provided with perforated pipes, and outlet pipes. The cooling medium is placed in the outer chamber, and the liquid to be cooled is supplied to the inner vessel in the form of spray, by means of perforations in the pipes.

Claim.—A refrigerator or condenser for cooling liquors or condensing vapors, consisting of an outer chamber B, and an inner chamber A, and a system of perforated pipes, substantially as herein specified.

No. 52,278.—ADAM EXTON, Trenton, N. J.—*Scroll Biscuit Machine.*—January 30, 1866.—The object of this invention is to furnish a machine by means of which strips of dough may be creased or figured for making scroll biscuit, and consists in channelling or creasing the grooves of the rollers, through which are passed the strips of dough from which the biscuits are made.

Claim.—The scroll biscuit machine constructed with creased rolls, and adapted to operate as and for the purpose herein described.

No. 52,279.—JOHN FASIG, West Salem, Ohio.—*Hay and Pruning Knife.*—January 30, 1866.—This invention consists in the construction of a hay knife that can also be used for pruning.

Claim.—The combined hay and pruning knife, when constructed and arranged as set forth.

No. 52,280.—WARD N. FLAGG, Boylston, Mass.—*Shank Lasters.*—January 30, 1866.—This invention consists in the combination of two levers provided with teeth at their lower ends, of long springs running inside of the jaws, and having thumb pieces and teeth corresponding to those above mentioned.

Claim.—The combination with the levers A A, operated as described, and having points *d d d* at their lower ends, of the long springs G G, provided with points *e e e*, and thumb pieces H H, as and for the purposes described.

No. 52,281.—M. C. FLOYD, Bloomfield, Iowa.—*Corn Planters.*—January 30, 1866.—This invention consists in combining with a corn planter having a jointed frame and two transporting wheels, a compound lever attachment, by which means the driver, while sitting upon his seat on one part of said frame, can easily elevate the other part of this frame sufficiently high from the ground to allow of the turning of the machine at the ends of the rows.

Claim.—First, the combination of the levers K g' and connecting rod J with the hinged frame A D, the lever K being provided with a ratchet, or its equivalent, by which it can be fixed at any desired point, substantially as described.

Second, supporting the seed-dropping device upon a frame D, which is hinged to the main frame A, and provided with a vertical post g' in combination with the rod J and lever K, substantially as described.

Third, providing for dropping the seed automatically by means of a studded wheel C acting upon levers P P′, which are connected together by a chain *r*, and which are also connected to the vibrating lever *g*, substantially as described.

Fourth, sustaining the vertical post g' upon the frame D by means of the draught-pole H, in combination with the rod J and vibrating lever K, arranged substantially as described.

No. 52,282.—NELSON GABEL, Preble county, Ohio.—*Corn-stalk Cutter and Stripper.*—January 30, 1866.—This invention consists of a knife and stripper constructed and arranged in such a manner as to cut and strip the stalks by a downward motion given by the hand.

Claim.—The plate B in combination with the springs *d d*, the plate *c*, and the spiral spring *e*, the whole constructed and operating as and for the purposes herein set forth.

No. 52,283.—H. P. GENGEMBRE, Pittsburg, Penn.—*Process for Extracting Oil, &c., from Minerals.*—January, 30, 1866.—This invention consists in treating the mineral with the light hydro-carbon oils, and extracting said oils from the spent mineral by means of water; also in separating the light oils used as a solvent from the paraffine and bitumen by distillation.

Claim.—First, extracting oils, paraffine or bitumen, from minerals containing the same, by submitting said minerals to the action of light liquid hydro-carbons, in a liquid state or in vapor, for the purpose of dissolving the oils, paraffine or bitumen, therein contained.

Second, treating the spent mineral with water or with an aqueous solution of mineral salt or salts, for the purpose of separating the spent mineral from the light liquid hydro-carbon oils, paraffine or bitumen.

Third, recovering the light liquid hydro-carbon by the process specified, and using it over and over for subsequent operations.

Fourth, the combination of the downward motion of the mineral with the upward motion of the solvent in the vessels A and C as described, and for the pupose specified.

Fifth, the application of mechanical power to divide the particles of mineral after they have soaked in the solvent, and without taking them out of the same, in the manner specified.

No. 52,284.—H. P. GENGEMBRE, Pittsburg, Penn.—*Apparatus for Extracting Oil, &c., from Minerals.*—January 30, 1866.—This invention will be fully understood by reference to the claim and engravings.

Claim.—First, the apparatus composed of the vessel A, vessel C, or of two vessels or more A and C, in combination with the still P, pipes Y and J, tank N and X, and furnace S, and flues T T, or any modification of the same, working and operating substantially in the same manner for the purpose specified.

Second, the vessel A, crusher B, vessel C, tables *b b b*, & *a*, shaft E, pipe K, elevator L, pipe V, and pipes I and J, when used for extracting, by means of a solvent oil, paraffine, or bitumen, from minerals containing the same.

Third, the still P, receiver N, double-bottom space Z, filled with an aqueous solution of salt or salts when combined with the worm V, tank X, pipe Y, vessel C, vessel A, pipe J, and furnace S, for recovering the solvent used in the operation and graduating the oil, paraffine or bitumen obtained to its proper gravity.

No. 52,285.—WILLIAM H. GILLIAM, Seattle, Washington Territory.—*Manner of Attaching Saws to their Handles.*—January 30, 1866.—The object of this invention is to attach and release a cross-cut saw blade to and from its handle, and consists in making two notches in the blade of the saw, one on the lower edge and the other on the upper, in such a manner that when the blade is put in between the plates of the socket the lower notch will fall on a pin, and by turning the socket over the end a spring catch-pin will drop into the upper notch and thus hold the blade fast to the plates.

Claim.—The spring catch *b* and stationary pin *f*, in combination with the ear A of a saw handle, and with notches *d e* in the saw, constructed and operating substantially as and for the purpose set forth.

No. 52,286.—VIRGIL D. GREEN, Watertown, Wis.—*Balanced Side Valves.*—January 30, 1866.—This invention consists of a sliding valve, to the interior of which steam is admitted through pipes attached to each of its sides. These pipes communicate with an arch which spans the valve and receives steam from the boiler. In the top of the valve is a plug used for balancing the valve, which bears upon a sector which is held in position and regulated by a set screw in the top of the arch; the valve is used in the usual manner, and does not require to be closed in a steam-chest.

Claim.—First, the hollow D-valve provided with ports for conveying steam to the cylinder, and having steam pipes F F attached to it, substantially as set forth.

Second, the balance plug G in connection with the valve D, for the purpose of balancing the valve as herein described.

Third, the valve or balance plug G, in combination with the set screw J, sector B, and spring Q, or their equivalents, for adjusting the plug as herein set forth.

Fourth, the arrangement of the brackets R R and bridge K, detachable from the valve for the purpose of adapting the valve to and relieving the steam in the cylinder in reversing engines, and allowing the use of the valve in non-reversing engines.

Fifth, the steam pipes F F arranged and operated substantially as set forth.

No. 52,287.—JONATHAN H. HAVEN, Lewiston, N. Y.—*Motive Power.*—January 30, 1866.—This invention will be clearly understood by reference to the claim and engravings.

Claim.—First, the oscillating frame B with the connecting rod *e* and supporting frame A, and lever C, constructed and operating substantially as and for the purpose herein set forth.

Second, the weighted fly-wheel H when used in combination with the above-described oscillating frame, having the gearing and band wheel constructed and arranged to operate as and for the purposes substantially as described.

No. 52,288.—CHARLES W. HILLS and O. F. WOODRUFF, Morrison, Ill.—*Bag Holder.*—January 30, 1866.—This invention consists in attaching to an upright standard a horizontal arm holding another arm or bar at right angles with itself, and suspended underneath the arm is a hinged band, which is provided with points to hold the bag and spring hooks, so that when the bag is fastened on the band this band is then brought up so that the spring hooks catch over the bar on the arm, and thus hold the bag in position to be filled.

Claim.—The hinged hoop D D, cross-bar C, spring catches H H, and arm *a*, constructed, combined, and arranged substantially as herein specified.

No. 52,289.—JAMES E. HOOPER, Baltimore, Md.—*Machine for Cleaning Cotton.*—January 30, 1866.—In this invention the wire screen forming the bottom of the trough through which the cotton is driven by the current of air generated by the willow, is arranged in sections and in a series of rising inclined planes, so that the cotton in passing from one plane to another shall receive a succession of shocks, the better to separate it from the dirt.

Claim.—The combination of the screens arranged as specified, with a willow for cleaning cotton.

No. 52,290.—Ezra P. Hoyt, New York, N. Y.—*Artificial Teeth.*—January 30, 1866.—This invention consists in the use of a metal base or plate with a perforated gum ridge, and having a re-enforce strip of metal soldered to the upper back edge or arch of the plate to stiffen it and prevent the hard rubber from peeling from the upper surface of the plate, and also another one soldered to the underside of the plate just behind the teeth so as to form an additional support to them, and under which the hard rubber engages and thus holds the teeth firmly and securely to the plate while at the same time it adds to the finish of it.

Claim.—A metal base having a perforated gum ridge B, and re-enforce strips of metal F and G, in combination with the hard rubber or other vulcanizable gums, and artificial teeth, substantially as described, for the purpose of making sets of artificial teeth.

No. 52,291.—C. S. Hurlbut, Springfield, Mass.—*Folding Lunch Box.*—January 30, 1866.—This invention consists in so attaching the side plates of the box to its bottom plates, and the end plates to its cover, which cover is divided across its width in two parts, hinged at their outer ends to the top edges of the said end plates, so that when the box is empty the said side end and cover plates can be all folded over and laid down upon the bottom plate, where they are held firmly together by clasps upon one of the cover pieces or sections, thereby producing a convenient, compact, and portable box for carrying of a lunch or dinner, and when so folded can be carried with ease in the pocket of the person.

Claim.—The combination of the bottom plate and folding hinged side, end, and cover plates, which are capable of being laid over the bottom plate, held firmly together by clasps upon one of the cover plates, in the manner and for the purpose herein specified.

No. 52,292.—Heinrich Jung, Port Chester, N. Y.—*Rock Drill.*—January 30, 1866.—This invention consists of a combination of devices for drilling holes in rocks in a perpendicular or inclined direction.

Claim.—First, the arrangement of the loose flange G and tappet F, applied in such manner as to elevate and rotate the drill simultaneously, in the manner and for the purpose set forth.

Second, the adjustable hinged drill frame C, carrying the loose drill rod E, with a loose flange G, in combination with the weighted elbow lever H, constructed and operating substantially as and for the purposes set forth.

No. 52,293.—Albert H. Kennedy, Brunswick, Ohio.—*Sheep Shears.*—January 30, 1866.—This invention consists in the application of power through spiral wire and the combination of machinery, so that sheep can be shorn with great ease and facility.

Claim.—The combination and construction of the machine and shears, and the application of the power necessary to shear wool from sheep, and which will produce the intended effect.

No. 52,294.—T. Kennedy, Mount Carmel, Conn.—*Screw-cutting Chuck.*—January 30, 1866.—This improvement consists, first, in adjusting the cutting tools upon the face plate so that they shall be always tangent to the circumference of the rod being cut; second, shaping the ends of the cutters so that when they are worn by use they may be taken out and sharpened by grinding.

Claim.—First, providing for adjusting the screw-cutting dies upon a face plate A, so that they shall always be tangent to the circumference of the body of the screw which is being cut, substantially as described.

Second, sustaining and confining screw-cutting dies *c* upon a face plate A by means of adjustable segments C C C′ C′ applied to said plate, substantially as described.

Third, pivoting the adjustable segments C′ C′ to the ring *h* of the face plate A in such a manner that the dies may be all adjusted alike, substantially as described.

Fourth, the combination of the adjusting screws *b* with means for adjusting the dies *c* and setting them at any desired tangent, substantially as described.

Fifth, constructing the screw-cutting dies *c* with beveled sides and beveled ends, substantially as described.

No. 52,295.—William H. and John S. Lakin, Lander, Md.—*Fertilizer Sower.*—January 30, 1866.—This invention consists of a box for sowing fertilizers in connection with grain, and being attached to the ordinary grain box or hopper of a drill, and the peculiar feature of improvement consists in the reciprocating pin, the latter moving over and acting in connection with the adjustable orifice in the bottom plate of the hopper to keep the discharge open for the passage of the fertilizing powder.

Claim.—The reciprocating vertical post E, with pin H, which vibrates in a horizontal plane above the aperture, substantially as described and represented.

No. 52,296.—William A. Lamberson and Thomas O. Morton, New York, N. Y.—*Curtain Fixture.*—January 30, 1866.—This invention consists in making the roller in two parts, with a ferrule to connect the inner ends; brackets, with journals on them to enter the outer ends of the roller, and a guard on one of the brackets to keep the cord on the spool or pulley.

Claim.—The roller A′ A, the ferrule B, the pivot C, the bracket I, and the fender D, when the whole of these parts are made and arranged in relation to each other, substantially as set forth.

No. 52,297.—GUSTAV LAUTENSCHLAGER and G. L. GOTT, New York, N. Y.—*Tobacco Pipe.*—January 30, 1866; antedated January 17, 1866.—This invention consists in a bowl or saliva reservoir for tobacco pipes, made of coal dust, prepared with pitch, rosin, or other suitable material for cement, and then pressed and formed in suitable moulds or cut out, and finally heated in a red heat in a kiln or open fire.

Claim.—A bowl or saliva reservoir for a smoking pipe, made of coal dust mixed with pitch or other suitable cement, and formed substantially as and for the purposes described.

No. 52,298.—A. P. and B. F. LANTERMAN, Prairie City, Ill.—*Governor for Steam Engines.*—January 30, 1866.—This invention consists in the construction and combination of its parts for operating the valve connected with the governor, for the purpose of regulating the admission of steam to the cylinder and automatically shutting off the same, either partially or wholly, in case of accident to the engine or machinery.

Claim.—First, the combination of the oscillating arm B, stem H, constructed as shown, and spring J, when arranged to operate as and for the purpose herein set forth.

Second, the combination of the stem H, valve U, and the adjusting valve stem *i*, arranged to operate as described.

Third, the lever K, connected to the valve stem, substantially as shown, in combination with the adjusting screw M, arranged and operating as and for the purposes set forth.

No. 52,299.—ALEXANDER M. LESLEY, New York, N. Y., and WILLIAM CRAIG, Brooklyn, N. Y.—*Gas Stove.*—January 30, 1866.—In the upper part of this device is a boiler filled through a pipe from outside to a level with the mouth of the pipe. Steam generated in this boiler by the heat from gas burned below, passes by a pipe down into the chamber, when the gas escapes from the jet and mingling with it rises to the point of combustion on a perforated plate under the boiler. In the bottom of the boiler the larger end of a truncated cone rests; its edges are somewhat irregular, so that the water rises to the water level in the boiler; the steam arising within this passes up to a burner near the top or smaller end of the cone and mixes with the burning gas.

Claim.—First, the combination with a gas stove of a steam generator or boiler, whereby a current or jet of steam is generated and thrown up in contact with a flame of gas, thereby insuring more perfect combustion and greater heat, substantially as described and specified.

Second, combining with a gas stove, constructed with a steam generator, substantially as described, a cone *e*, or equivalent device, for directing the steam to the flame of gas, substantially as described and for the purposes specified.

Third, the combination and arrangement of the steam generator D, cone *e*, pipes *b* and *d*, with their connection, and the cylinder E, constructed and operating substantially as described and specified.

No. 52,300.—ALEXANDER M. LESLEY, New York, N. Y., and WILLIAM CRAIG, Brooklyn, N. Y.—*Gas Stove.*—January 30, 1866.—This invention is an improvement on same patent by the same parties, and will be fully understood by reference to the claim and engraving.

Claim.—The combination of a current of steam with a flame of illuminating gas and a supply of air, substantially in the manner herein described and specified.

No. 52,301.—JOHN H. LESTER, Brooklyn, N. Y.—*Oil for Lubricating Machinery.*—January 30, 1866.—This invention consists of gelatine one part, fat or tallow two parts, paraffine or mineral oil one part, and animal or vegetable oil one-eighth part.

Claim.—The above-described production of an improved mechanical oil for lubricating machinery and other purposes, substantially as set forth.

No. 52,302.—ROBERT LIVINGSTON, New York, N. Y.—*Tobacco Pipe.*—January 30, 1866; antedated January 18, 1866.—This invention consists in giving the mouth-piece a downward turn at its end, by which means the saliva is kept from entering the stem; it is susceptible of various modifications not materially affecting its general character.

Claim.—In combination with the stem A, closed as shown, the tube C, or its equivalent, for the purpose specified.

No. 52,303.—W. D. LUDLOW, New York, N. Y.—*Cotton Pickers.*—January 30, 1866.—The claim and the drawing fully explain this invention.

Claim.—First, the employment or use, for picking cotton from the bolls in the field, the case A, picking gate, comb, or fingers D, and strippers J and K, combined and operating substantially as described.

Second, the sliding picker gate, comb, or fingers D, as set forth.

Third, the strippers J and K, as set forth, separate or together.

No. 52,304.—W. G. LUMBARD, Georgetown, Ill.—*Sawing Machine.*—January 30, 1866.—This invention consists in the attachment of the saw bar to the cross-head that works on a slide, by means of hinging the pitman to the cross-head instead of to the bar, and in the use of a compound lever to raise the saw up from the log.

Claim.—A sawing machine, constructed and arranged substantially as described and for the purpose set forth.

No. 52,305.—THOMAS MCDONOUGH, Middletown, Conn.—*Hot-air Engine.*—January 30, 1866.—This invention consists in arranging a pipe filled with wire gauze so that the air, in its passage from the furnace to the cylinder and from the cylinder to the furnace, shall alternately pass one of the surfaces of the wire, and thus utilize the heat contained in each subsequent charge of air; it also consists in the combination of the pipes with the furnace and cylinder.

Claim.—First, the arrangement of the pipe W, by means of which the in-flowing air and out-flowing gas pass alternately through the same passage and over the same surfaces.

Second, the combination of the cylinder and pipe with the furnace, substantially as described, forming parts of a gas engine.

No. 52,306.—C. L. MCDOWELL, Wassonville, Iowa.—*Hand Loom.*—January 30, 1866.—In this invention the oscillating motion of the batten operates the shuttles, harness, and cloth beam. A "click" wrench, connected by a pitman with the batten, actuates a tappet shaft, whose tappets act upon the harness levers, as also alternately upon picking levers; an endless cord from this shaft extends around the cloth beam and also around a tightening pulley; any slack fabric is thus taken up, and if there be none the cord will slip.

Claim.—First, the specific combination and arrangement of the picker staffs L L′, shaft G, tappets *l l′*, picker *o*, and flies S S, when the motion of all these parts is derived from the batten, as herein set forth.

Second, communicating the required motion to the cloth beam from the batten, by the means described.

No. 52,307.—MARVIN MEAD, Augusta, Mich.—*Shaft Couplings.*—January 30, 1866.—By means of this invention the shafts of a vehicle can be taken off by merely raising them and moving them, without the necessity of unscrewing bolts or screws.

Claim.—The clip A, constructed as described, to hold the shank B, said clip being provided with a countersink beneath the end of the shank, in which countersink is placed a piece of India-rubber, or other elastic material, which is there held by means of a pin which passes through the clip, substantially as and for the purpose specified.

No. 52,308.—GEORGE MEADER, Ottowa, Ill.—*Propeller.*—January 30, 1866.—This invention consists of circular or any other suitable shaped paddles, hung at the lower ends of swinging lever rods, attached by universal joints to a pinion wheel gearing, and interlocking with the toothed surface of horizontal sliding bars, moving and travelling in suitable guides of the vessel. The swinging lever is actuated by a horizontal rod moving in guides.

Claim.—The combination with the actuating rods *t t*, swinging levers *d d*, and paddles *b b*, of the universal joints *f*, pinion wheels *g*, and sliding rack bars *l*, arranged and operating in the manner and for the purpose explained.

No. 52,309.—WILLIAM MOSES, Buffalo, N. Y.—*Grain Mover.*—January 30, 1866.—This invention consists in the employment of condensed air forced through an eduction nozzle into a portable section of tubing, or other conductor, by means of a condensing pump or other suitable engine, so that the force of the blast at its discharge shall convey the grain, into which the receiving end is immersed or in contact with, through the conductor, and discharging it at the opposite end; and also connecting said nozzle and conductor with the condensing pump by means of a flexible hose or tubing, whereby the instrument is made portable and adapted to carrying into any part of the hold of a vessel, while the compressed air is supplied from stationary machinery on the adjoining dock, or warehouse, or vessel; and also in the application of a cock for regulating the force of the discharge to adapt it to heavier or lighter grains; and further, in the employment of a nozzle specially constructed for sweeping the loose grain along the floor to a place of delivery after the bulk has been removed.

Claim.—First, the employment of a direct blast of compressed air in combination with the portable tube A, or its equivalent, for conveying and discharging grain, substantially as set forth.

Also, in combination with the air nozzle B, and conductor A, the flexible hose H, whereby the apparatus is rendered portable and independent of the engine which supplies the condensed air, substantially as and for the purposes set forth.

Also, in combination with the air nozzle B, and conductor A, the stop-cock E, operating in the manner and for the purposes set forth.

Also, the T-formed nozzle G, in combination with the air pipe B, and hose H, operating in the manner and for the purpose set forth.

No. 52,310.—DAVID MYERS, Chicago, Ill.—*Car Brake.*—January 30, 1866.—This invention consists in a device whereby the brakes can be applied simultaneously to all the cars composing a train either by the engineer upon the engine, or by the baggage-master, or any other person in the baggage car. Also, in a device whereby the amount of tension applied in operating the brakes can be perfectly regulated and controlled.

The mechanism is somewhat complicated, and will be more fully understood by reference to the drawings and claims than from any brief epitome.

Claim.—First, in combination with the spring D, or its equivalent, the employment of a device for throwing the pawl H into the rack I, substantially as specified and shown.

Second, the combination of the springs D, the rod F, provided with the head F′, and the bent arm G, arranged and operated as and for the purposes described.

Third, the combination of said spring D, rod F, arm G, and the pawl H, arranged and operating as and for the purpose shown and specified.

Fourth, the combination of the wedge E with the arm G and rod F, provided with the head F′, arranged and operated as and for the purposes specified.

Fifth, the combination of said wedge E with the crank shaft L and arm M, as and for the purposes shown and described.

Sixth, operating the friction wheel for applying the brakes by means of the bell cord *a′*, or its equivalent, in combination with a spring operating substantially as specified and shown.

No. 52,311.—DAVID MYERS, Chicago, Ill.—*Car Brake.*—January 30, 1866.—This invention consists in a device to be attached to each car composing a train, whereby the brakes upon all the cars may be simultaneously operated by tension upon a chain extending throughout the length of the train.

Claim.—First, the employment of the levers *c c*, arranged and operating substantially as and for the purpose herein specified and shown.

Second, the combination of said levers *c c* with the sliding block B, arranged and operating substantially as and for the purpose shown and described.

No. 52,312.—DAVID MYERS, Chicago Ill.—*Car Brake.*—January 30, 1866.—This invention consists in a novel arrangement of mechanical devices by means of which the engineer by pulling the bell cord applies the brakes to every car in the train, or so many of them as have the invention attached, and then by a second pull upon the bell cord he removes the brakes, and does not at any time interfere with the usual operation of the bell cord, nor in the use of the brakes in the usual manner by the brakemen of the train. A description of the devices and their operation would be as long as the specification. They are fully shown in the drawings and set forth in the claims.

Claim.—First, the arrangement of the pulleys H, movable block G, and the cords D and F, when operating substantially as and for the purpose set forth.

Second, the plate E, when constructed and operating substantially as described.

Third, the combination and arrangement of the plate E, button *d*, ratchet wheels I I′, and the movable block G, when constructed and operating substantially as herein specified.

Fourth, the crooked levers R, when constructed and operated substantially as set forth.

Fifth, the combination and arrangement of the frame C, or its equivalent, the sliding pieces N and O, the springs V and T, or their equivalents, the levers R and devices for operating the sliding pieces N and O, when all constructed substantially as and for the purpose herein described.

Sixth, the hook *q*, ratchet wheel V, and pawl *p*, when arranged and operated substantially as set forth.

Seventh, the combination and arrangement of the lever W, arm *r*, lever L, bent lever X, and pawl *p*, when constructed and operating substantially as described.

Eighth, the combination and arrangement of the lever L, cross lever *n*, jointed dog S, and sliding piece O, when operated substantially as and for the purposes herein specified.

No. 52,313.—MOSES NEAL, Kalamazoo, Michigan.—*Churn.*—January 30, 1866.—This invention consists of a vibrating dasher churn, in which the beaters are so placed on the shaft as to be about parallel to the sides when respectively and alternately brought in contact therewith, preventing the cream from establishing a vertical or circular motion, and compelling it to escape directly past the edges of the beaters.

Claim.—The vibrating dasher rod, pivoted with beaters so placed that when in contact with the sides they are parallel therewith, in combination with the vessel A, and breakers H, the whole constructed and operating substantially as described and represented.

No. 52,314.—ISAAC P. NOYES, Providence, R. I.—*Explosive Shell.*—January 30, 1866.—This invention consists of a cylindro-conoidal form opening at the rear end, which is covered or closed by a suitable plug or sabot. It is loaded much as a canister shot, but discharges its contents backward instead of forward by means of either a time or percussion fuze.

Claim.—A projectile which, with the effective properties of a direct shot, possesses the additional one of being capable of discharging a load of shot from its rear end, either during its flight or after it has struck, said projectile being constructed substantially as herein described and for the purposes set forth.

No. 52,315.—B. F. PETTINGELL, Newburyport, Mass.—*Cement for Leather.*—January 30, 1866.—This invention consists of a composition made by dissolving half an ounce of caoutchouc, and one-sixteenth of an ounce of sulphur in one pint of naphtha.

Claim.—The combination made of the ingredients, and in the manner and for the purpose, substantially as hereinbefore explained.

No. 52,316.—DANIEL L. PICKARD, Rochester, N. Y.—*Lamp.*—January 30, 1866.—This invention consists of a combination of the reservoir with the wool absorbent hinge, inside deflector, spring catch divided, with the tube in the upper section enlarged, and the gas chamber, all constructed as set forth.

Claim.—Said lamp as fully described and set forth, consisting of a combination of an ordinary reservoir filled with wool as an absorbent, the hinge within the deflector forming a stop, as set forth, the spring catch regulated by the screw, the wick tube made, as set forth, in two sections to cut off heat, the upper section larger than the lower, with the lower end thereof enlarged for the double purpose of allowing the wick to play easily, and of allowing the rising gas to pass into the gas chamber and flame, as set forth, and the chamber *h* to hold the gas and deliver it regularly and not in puffs to the flame, the whole combined and arranged as set forth.

No. 52,317.—ROBERT G. PIKE, Middletown, Conn.—*Mowing Machine.*—January 30, 1866.—This invention will be clearly understood by reference to the claim and engraving.

Claim.—The combination of the drum *c c*, pins *n n'*, steel lever or vibrator F, spindle or shaft D E, and lever or finger G, when arranged in the manner described and employed to operate the cutter bar as set forth.

No. 52,318.—JOHN PRICE, New Harrisburg, Ohio.—*Cotton Seed Planter.*—January 30, 1866.—This invention consists in the arrangement of shovels, ploughs, and rollers, upon hinged frames in connection with a spiked roller for planting cotton seed, the frames and rollers being capable of swinging up, in order to throw the plough out of the ground, and the roller out of the gear.

Claim.—First, the spiked roller in combination with the staples or their equivalents, for feeding the cotton seed into the seed tubes without clogging, substantially in the manner set forth.

Second, the arrangement of the feed box and spiked rollers in combination with the cog wheels and lever S, substantially as described for the purposes specified.

Third, the combination of the frames C and E, and the pulleys J and K, arranged and operated substantially as set forth.

No. 52,319.—GEORGE RACE, Norwich, N. Y.—*Broadcast Seeder.*—January 30, 1866.—This invention consists in the arrangement of an adjustable rotating hopper provided with a swinging valve, in combination with a revolving drum provided with longitudinal ribs to which are attached grain cups or buckets, by which the grain is thrown over into a concave from which it escapes to the ground.

Claim.—First, a broadcast seed sower having a rotating and adjustable hopper for the purpose of regulating the quantity of grain to be distributed.

Second, in connection with the rotating hopper, the swing valve, when used for the purposes and substantially as described.

Third, in connection with the swing valve, the drum with its longitudinal ribs, having cups located alternately, as shown.

Fourth, in connection with the swing valve, the elevations or inclines upon the longitudinal ribs for the purposes shown and described.

No. 52,320.—ANDREW RANKIN, New York, N. Y.—*Chamber Pot.*—January 30, 1866.—This invention consists in forming the handle and cover of a chamber pot hollow, or with suitable stoppers, so that a deodorizing agent or compound may be placed in said recesses.

Claim.—So constructing a chamber pot as to form a receptacle or receptacles for any suitable deodorizing agent or compound, substantially in the manner described and for the purpose specified.

No. 52,321.—JOHN B. RUPERTS, assignor to himself and E. S. and BUTLER COLES, Jersey City, N. J.—*Machine for Hulling Cotton Seed.*—January 30, 1866.—The object of this invention is to remove the hull or skin from cotton seeds, and keep the kernel whole, and consists in having a revolving disk with radiating knives fixed therein on its upper side, and towards an inclined stationary surface, having similar knives arranged therein with segmental blocks interposed between said knives, which operate to cut the hull from the kernel.

Claim.—First, the blades or knives as described, in combination with a series of segmental blocks interposed between them so as to hold the latter in place and adjustable in radial directions, substantially as set forth.

Second, placing the central block K on the bed plate J, when the same has a flange U projecting over the inner ends of the blocks Q, and when its top is made convex, substantially as described.

No. 52,322.—HARVY REYNOLDS, New York, N. Y.—*Chimney Cap.*—January 30, 1866.—In this invention, at the top of the vertical pipe is fixed by any convenient arrangement a short pipe at right angles with the first, and open at both ends; around the sides of this is a flattened chamber, being the continuation of said exit flue, which opens into the second nearly at the top of it.

Claim.—The combination of the tubes A and B with the passage C, arranged substantially as shown and described, to form a new and improved chimney cap or ventilator.

No. 52,323.—ITHIEL S. RICHARDSON, Boston, Mass.—*File Clasp for Documents.*—January 30, 1866.—Antedated January 19, 1866.—The papers are held between two wires, a little longer than the width of the papers, and provided each with arms at their ends, at right angles to the wires; said arms being connected by spiral springs, which force the two wires against each other.

Claim.—The application of wire bent in the forms above described, together with the plates and springs of spiral springs in continuation, to be used for the filing or docketing of papers and documents, substantially as above set forth, and denominated the spiral spring file holder.

No. 52,324.—JOSEPH RYAN, St. Louis, Mo.—*Hydraulic Jack.*—January 30, 1866.—In this invention an upright cylinder, having a hollow plunger within it, has upon its platform, concentric with it, a semicircular reservoir, and on the other side, also attached to it, a pump, the reservoir and pump and cylinder being connected with each other by means of pipes, the whole platform and pipes being suspended between wheels from a frame for transportation, through which frame passes a lifting screw.

Claim.—The combination, substantially as herein described, of a reservoir *C* and pump L with each other and with the cylinder E, of a hydraulic jack, when the reservoir is secured to the cylinder, substantially in the manner herein set forth.

Also, in combination therewith, the cylindrical plunger or piston *C*, cylinder E, arranged and operating substantially in the manner herein set forth.

No. 52,325.—GEORGE A. SCHERPF, Hoboken, N. J.—*Process for Parting Gold, Silver, and Copper.*—January 30, 1866.—This invention consists in conducting the vapors of sulphurous and sulphuric acid, generated during the operation of parting through a chamber filled with fragments of stone or similar material over which water is allowed to flow. The water absorbs the sulphuric acid, and the sulphurous acid gas passes on to a chamber containing a solution of salt capable of uniting with the sulphurous acid. The chamber containing said solution is provided with suitable agitators.

Claim.—The combination of this production, of such or any other compounds, whereof sulphuric acid or sulphurous acid is one of the first bases, with the parting of the above-named metals by sulphuric acid, as described herein.

No. 52,326.—SPARKMAN R. SCREVEN, Philadelphia, Penn.—*Artificial Teeth.*—January 30, 1866.—This invention consists in attaching the teeth to the rubber base by a T-shaped fastening, composed of two flanges, connected by a rib or web, one of which flanges is imbedded in the tooth, and the other in the rubber base, thus forming a firm connection.

Claim.—A T-fastening constructed as and for the purpose as herein shown and described.

No. 52,327.—J. F. SEIBERLING, Doylestown, Ohio.—*Harvester.*—January 30, 1866.—An adjusting bolt, provided with a rubber spring, as attached to the reel standard for adjusting the pendant pulley support in such manner as to secure a yielding tension of the reel band, sufficient at all times, however, to cause the required rotation of the reel. The hub of the reel is provided with two sets of angular sockets in which the spokes, or arms, and braces are firmly fixed for attaching and properly supporting the reel ribs from a single hub.

Claim.—First, a reel hub in which the sockets for the short arms project from or near the extreme outer ends of the sockets for the long or radial arms, substantially in the manner and for the purposes described.

Second, the adjusting bolt S, in combination with the rubber spring or its equivalent, and the stiff pendant B, for supporting the pulley and giving tension to the band or chain, substantially in the manner described.

No. 52,328.—GEORGE SEWELL, Brooklyn, N. Y.—*Mode of Attaching Car Wheels to Axles.*—January 30, 1866.—This invention is fully understood by reference to the claim and engraving.

Claim.—The two stuffing boxes, the collar *h*, and annular plate k, all arranged with reference to each other and to the chambered hub, substantially as set forth, for the purpose specified.

No. 52,329.—A. S. SHERWOOD, Detroit, Mich.—*Lightning Rod.*—January 30, 1866.—The object of this invention is to increase the strength without adding to the weight of the rod.

Claim.—The combination of the turned or wired copper ribbon, with the corrugated tubular top, substantially as and for the purpose described.

No. 52,330.—JOHN E. SHORT, New Richmond, Ohio.—*Broom Head.*—January 30, 1866.—This invention is clearly understood by reference to the claim and engraving.

Claim.—Constructing a broom head out of sheet metal and wire, in the manner described by the specified construction and arrangement of the head A, wires B B', pins D, socket C, and handle H, for the purposes set forth.

No. 52,331.—HARRISON N. M. SMITH, Philadelphia, Penn.—*Skate.*—January 30, 1866.—This invention consists in a sliding heel pin, and in its combination with a hinge or joint dividing the skate into two parts, each one being provided with a runner.

Claim.—First, a sliding heel pin for the purpose as is herein shown and described.

Second, the combination of the sliding heel pin *d*, and the hinge or joint *c*, as is herein shown and described.

No. 52,332.—HENRY SMITH, Salem, Mass.—*Operating Window Blinds.*—January 30, 1866.—The object of this invention is to provide a balance to the varying power of a coiled spring in such a manner that the power given out by the spring will be equalized, so that in unwinding the spring will give out the same power when it is nearly unwound, as when it is tightly coiled.

Claim.—First, compensating for the increased or diminished power of a coiled spring in its various degrees of tension by means of a pinion working in a scroll gear or volute-toothed rack, whether said rack is wound on a plane surface or on the periphery of a cone, substantially as described.

Second, the combination of the volute-gear travelling pinion, spring, and shade roller, for the purpose of controlling the power of the spring in its action upon the said roller as described.

No. 52,333.—HENRY SMITH, Salem, Mass.—*Operating Window Sash.*—January 30, 1866.—This invention consists in the combination of a volute or small wheel, lever, or coiled spring, operated by a rack upon the window sash to raise and lower the same, and keep the sash in a desired position when raised, and also of a bolt for fastening the window, in combination with the devices referred to.

Claim.—A window sash having a rack *c c*, operated by means of the volute-gear travelling pinion and spring, all substantially as described.

Also, in combination with the foregoing the sliding bolt R, for locking the window, as described and shown.

No. 52,334.—HENRY SMITH, Salem, Mass.—*Mechanical Movement.*—January 30, 1866.—This invention will be clearly understood by reference to the claim and engravings.

Claim.—First, the volute wheel and pinion as shown, when used in connection with a coiled spring, for the purposes described.

Second, the movable shaft E E and box *g g*, when used in connection with the volute wheel and pinion, as already set forth.

Third, the spring *f f*, when used in combination with the volute wheel and pinion, for the purposes indicated.

No. 52,335.—NORMAN C. STILES, Meriden, Conn.—*Clutch for Power Press.*—January 30, 1866.—In this invention the percussion caps properly primed, and placed in a horizontally revolving corner or turn-table are brought in succession under the action of an automatic varnishing rod or stem, operated by suitable cams, so as to deposit a drop of shellac or other suitable varnish within each cap, after which a punch drives through a die or cutter plate, a disk of tinfoil, supplied to said plate by feeding rollers, depositing the tinfoil within the caps and forming a secure lining thereto.

Claim.—A clutch for connecting or disconnecting power, consisting of a bolt *d*, latch *f*, and trip c, arranged to operate substantially in the manner described.

No. 52,336.—NATHAN C. STOW, Stoneham, Mass.—*Burnishing Machine.*—January 30, 1866.—This invention consists in a conical wheel, the surface of which is composed of fillets; it will be fully understood by reference to the claim and drawings.

Claim.—First, a rotating burnishing wheel, formed substantially as described, for the purpose set forth.

Second, the shoe holder made substantially as described, and for the purpose set forth.

No. 52,337.—JACOB SURERUS, Newark, N. J.—*Pruning Knife.*—January 30, 1866.—This invention relates to the several combinations of parts, viz: knife, hollow handle, screw cap, cord, and pulley, the whole being operated by means of the cord passing over said pulley, and when not in use the cord can be incased within the hollow handle, and confined there by screwing on the hollow cap, and released by unscrewing said cap.

Claim.—The pruning knife A, having hollow handle *l*, with screw cap *m*, and cord *o* passing around a pulley *p* of one handle, and hung to the other, substantially as and for the purpose described, which cord and cap when not in use are incased within and by the said hollow handle, as specified.

No. 52,328.—Michael Sweeney, J. E. Mathews, and Thomas Hartley, Wheeling, West Virginia.—*Glass Moulds.*—January 30, 1866.—This invention consists in making them of cast-iron chills to their interior surfaces in casting, and forming an enlargement around the middle of the mould, and in the mode of attaching handles.

Claim.—First, the application in making moulds for glass of cast-iron or steel chills to their interior surfaces in casting, substantially as and for the purpose above set forth.

Second, forming an enlargement around the middle of the mould, in order to obtain the equalization of heat in the mould while glass is being pressed therein, substantially as set forth.

Third, the manner, substantially as above shown, of attaching handles to moulds for glass.

No. 52,339.—S. Taylor, Worcester, Mass.—*Knee Swell for Organs and Melodeons.*—January 30, 1866.—This invention consists in pivoting a knee lever to the frame piece under the action in such a manner that when not in use it can be turned out of the way, and when used can be made to operate the mechanism which opens and shuts the swell valves.

Claim.—The combination with the front of an organ or melodeon of a hinged knee lever for operating the swell, substantially as set forth.

No. 52,340.—Thomas J. Thorn, Skaneateles, N. Y.—*Churn.*—January 30, 1866.—This invention consists in the combination and arrangement at right angles of the paddles, and the attachment on the under side of the churn cover of a double tube, sliding in and out in double grooves, in such a manner as to give uniformity of motion in one case, and at the same time ventilation to the cream in the other.

Claim.—The combination and arrangement of the paddles C and D, arranged at a right angle to each other, substantially as described, with the tube A for ventilation, the whole arranged in the manner shown and specified.

No. 52,341.—John Thrasher, West Liberty, Ohio.—*Wagon Wheels.*—January 30, 1866.—This invention consists in combining with the hub and with the spokes of a wagon wheel a metallic band, provided with sockets for the reception of the spokes, said sockets being cast solid with the band. Thus the spokes are strengthened at that point where they meet the outer surface of the hub.

Claim.—The hub band B, pivoted with sockets C to fit the large part of the spokes, while the mortises in the hub receive the spoke tenons, all substantially as herein described.

No. 52,342—Samuel E. Tompkins, Newark, N. J.—*Saddle-tree.*—January 30, 1866.—This invention relating to saddle-trees, consists in having its depressions covered with a body leather sunk into them, in an elongation of the frame, and in a crupper loop, made separately from the tree, with shoulders and ends bent down, so as to pass through the body leather, and holes in the rear part of the frame, where they are riveted.

Claim.—First, a gig saddle-tree, having its frame B provided with longitudinal depressions *a*, and covered with a body leather *c*, sunk or forced into the depressions *a*, substantially as shown and described.

Second, the elongating or extending of the frame B so that it may project below the body leather to admit of the stiffeners D being attached directly to it by rivets, nails, or other means, substantially as set forth.

Third, the crupper loop F, constructed and attached to the frame B, substantially in the manner as and for the purpose specified.

No. 52,343.—Edwin J. Toof, Fort Madison, Iowa.—*Paper Holder.*—January 30, 1866.—This invention is fully understood by reference to the claim and engraving.

Claim.—First, producing a pressure upon the roller by means of an elastic bar B, or its equivalent, substantially as described.

Second, constructing the roller A in two parts, when connected and provided with a spring *d*, or its equivalent, substantially as shown and specified.

Third, so constructing and arranging the frame C and axis *a* with a roller A, that the apparatus may be extended, substantially as and for the purposes specified.

No. 52,344.—Alfred W. Turner, New York. N. Y.—*Table or Call Bell.*—January 30, 1866: antedated January 22, 1866.—This invention consists in applying a bell to a vertical spindle, which may be attached to a suitable base, said bell being allowed to slide freely on the spindle, and having a spring or elastic cord connected with it, so as to have a tendency to draw the bell to the top of the spindle, when the sound is given. When the bell is depressed on the spindle it is held by a catch.

Claim.—The sliding bell placed on a spindle or arbor, which is attached to a separate base or to any table article, in connection with a spring or its equivalent, arranged to operate in the manner substantially as and for the purpose set forth.

No. 52,345.—Austin M. Turney, Butternut, N. Y.—*Composition for Destroying Insects.*—This invention consists of a composition of water, tobacco, quassia wood, sulphur, aloes, and gas tar

Claim.—The above-described article, remedy, or compound, from the above-named ingredients, as and for the purposes herein set forth.

No. 52,346.—SAMUEL VANCE, Newburyport, Mass.—*Pump*—.January 30, 1866.—In this invention a glass cylinder being arranged for the operation of the piston, is held in position by a yoke grasping the exterior cylinder above the piston chamber, and bowed beneath the cylinder, where a central set screw renders the grasp adjustable.

Claim.—The securing of the glass cylinder E to the sockets or heads G G′, and to the pump stock A, by means of the yoke or clamp H, and screw I, arranged in the manner substantially as and for the purpose herein set forth.

No. 52,347.—CONRAD PH. WAGNER, New York, N. Y.—*Quartz Mill.*—January 30, 1866.—This invention consists in two revolving toothed surfaces, one within the other, the interior in the shape of a cone, and the other one formed around the interior; both of these parts revolve in the same direction, but the interior one much faster than the outer.

Claim.—The combination of the two crushing and pulverizing cylinders E I, arranged and constructed as described, with rotation of the two cylinders in the same direction, but one with a greatly accelerated speed over that of the other, for the purpose and operating in the manner described.

No. 52,348.—CHARLES C. WELLS, Lyons, Iowa.—*Cultivator.*—January 30, 1866.—This invention consists in the formation of a cultivator frame by attaching hounds to a common wagon axle in an adjustable manner and attaching the plough standards to the hounds, the whole so arranged that by means of a lever and the feet of the operator the ploughs may be moved laterally and vertically at pleasure.

Claim.—First, so constructing and arranging the hounds C C, front cross-beam *v*, and rear beam *v″*, in combination with the axle A, that the same may be adjusted by the movable bolts and holes, substantially in the manner and for the purpose herein set forth.

Second, constructing and arranging the standards D^1 D^2, in connection with the hounds, so that they may be shifted from the straight bolts *f f* to the elbow ones *e e*, substantially in the manner and for the purpose herein set forth.

Third, the application of the stirrups F F to the rear of the standards D^1 D^2, substantially in the manner and for the purpose herein set forth.

Fourth, the combination of the lever E with the stirrups F F and standards D^1 D^2, for raising the latter in conjunction with the feet, substantially in the manner and for the purpose as herein set forth.

Fifth, the arrangement of the rear cross-beam *v″*, in combination with the stirrups and standards, so that the latter may be moved in a lateral direction independent of each other, substantially in the manner and for the purpose herein set forth.

No. 52,349.—WILLIAM N. WHITELEY, Jr., Springfield, Ohio.—*Harvester.*—January 30, 1866.—This invention consists in providing a stud upon the outer shoe for the attachment of the track clearer; also in attaching the cutting apparatus to the main frame by means of a sliding bolt passing through one of the arms of the bracket, so as to be readily attached and detached.

Claim.—First, in combination with the track clearer of a mowing machine the stud L and shoulders *m m*, or their equivalents, for the purpose set forth.

Second, in combination with the shoe F the sliding bolt *d*, for the purpose of rendering the shoe and cutting apparatus easy of attachment and detachment, substantially as described.

Third, the combination or arrangement of the shoe F, sliding pin *d*, bracket C C B, and lever E, substantially as described, so that the cutting apparatus may be attached or detached, may fall slightly below or rise slightly above the line of level with the machine, or be entirely folded over upon the machine, and so that the pitman can only be unhooked from the cutter bar when the cutting apparatus stands nearly vertical.

No. 52,350.—WILLIAM N. WHITELEY, Jr., Springfield, Ohio.—*Harvester.*—January 30, 1866.—This invention consists in attaching the tongue to the frame by a plate and disks, the lower disk being upon said plate, also in attaching the hand lever to the tongue by means of serrated disks, and providing a hook for holding said lever rigidly to the frame; also in the use of a spring attached to the tongue to hold the frame up when going down hill.

Claim.—First, in combination with the tongue plate H the draught disks *L* and *K*, so that the strain of the draught will be communicated through said plate to the frame of the machine and not through the tongue.

Second, in combination with the tongue of the machine the serrated disks O and o, and the hand lever N, for the purpose set forth.

Third, in combination with the hand lever N the hook R, for the purpose of holding the tongue rigid when desired.

Fourth, the spring S, or its equivalent, for the purpose set forth.

No. 52,351.—WILLIAM N. WHITELEY, Springfield, Ohio.—*Harvester.*—January 30, 1866.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—First, connecting the fore ends of the rails of the main frame by means of a metal box, substantially as described, in which box the tools may be carried.

Second, the three-armed bracket which supports the seat, substantially as shown and described.

Third, making the journal box for the crank shaft, and the hemispherical shield for the fly wheel and crank, in one and the same piece of casting.

Fourth, supporting the reel post by the braces Q′, substantially as shown and described, so that the main shaft may be adjusted between the braces.

Fifth, the peculiar construction of the pulley and journal at the end of the reel shaft, in combination with the sliding box or hook in which the journal turns.

Sixth, arranging the spring which presses the rake crank on to its clutch pin inside of the hub of the crank, as shown and described.

Seventh, in combination with a ball-headed pivot and box working on the ball, the straps on the box, which fasten it to the rake head.

Eighth, the spring latch N′, in combination with the rake and rake bow, for raising and dropping the rake.

Ninth, the shield on the top of the rake, as shown and described, to support the falling grain and make the rake slip out from under it with facility.

Tenth, making the rear of the platform to incline upward, in combination with the curve in the rake guide, which raises the rake over the inclined part of the platform.

Eleventh, making the outer reel standard to curve outward and upward as shown and described, in combination with the toothed plates for adjusting the reel bearer.

No. 52,352.—WILLIAM L. WILLIAMS, New York, N. Y.—*Wood-splitting Machine.*—January 30, 1866.—This invention, which is designed as an improvement on a patent granted to the same inventor, consists in constructing the trough containing and carrying the wood to the knife and beyond, wider at the delivery than at the feeding end, and in extending the endless feeding chain to deliver the split wood, also in providing a yielding side to the trough.

Claim.—First, a trough, for containing the pieces of wood, formed narrower at the feeding than at the delivery end of said trough, in combination with reciprocating knives or cutters that split the wood, as set forth, in order that the wood may be moved along freely in said trough without jamming, as set forth.

Second, extending the feeding chains along the sides of the feeding trough, in combination with reciprocating knives, so as to operate in delivering the split wood, as set forth.

Third, the yielding side piece *r* of the trough in combination with the chains *q q* and knives, for the purposes and as set forth.

No. 52,353.—L. D. WYNKOOP, Owassa, Mich.—*Water Wheel.*—January 30, 1866.—This invention relates to a combination of two wheels so arranged as to be acted upon, one by the direct and the other by the wasting power of the water, and a very large percentage of the power of the water which passes through the wheels obtained and transmitted to one shaft from which the power is taken.

Claim.—The combination of the two wheels B D, arranged as shown in relation. with the scroll A, and connected with a shaft H from which the power is taken, substantially as herein shown and described.

No. 52,354.—F. YEISER, Danville, Ky.—*Transmitting Motion.*—January 30, 1866.—The object of this invention relates to a mechanism intended to transmit the power and motion from a piston rod of a steam cylinder, or from another reciprocating device, to a crank shaft, with the least possible loss of power.

Claim.—The worms *c c′*, nuts *e e′*, and tappets *f f′*, or their equivalents, in combination with the guides C, lips *g g′ g* g′**, and cranks *a a′*, in the crank shaft A, constructed and operating substantially as and for the purpose set forth.

Also, the adjustable stops *h h* h′ h′**, in combination with the tappets *f f′*, nuts *e e′*, worms *c c′*, and cranks *a a′*, constructed and operating substantially as and for the purpose described.

No. 52,355.—R. N. ALLEN, assignor to W. R. MOULD, Cleveland, Ohio.—*Wooden Piston Rods for Deep Wells.*—January 30, 1866.—In this invention the sections are connected by means of metallic screws and sockets, flattened, continuations of which pass far into the wooden rods, which are slotted for the purpose; the edges of this metallic continuation have enlargements or bosses at intervals, for the reception of which the rod is countersunk. Grooves are made at intervals, and the tube for wire wrappings to embrace the tube and blade within it.

Claim.—The plates F, provided with one or more bosses *a*, in combination with the section A or B of the rod, arranged and secured together, substantially as and for the purpose set forth.

No. 52,356.—MELLEN BRAY, Boston, and JOSEPH A. TALPEY, Somerville, Mass., assignors to WILLIAM K. LEWIS, Boston, Mass.—*Pea Shelling Machine.*—January 30, 1866.—This invention consists in the use of an endless apron with a pair of fluted rollers, the apron conveying the peas to the rollers, and the latter expelling the peas from the pods after they have been dropped with their ends towards the rollers from a slotted vibrating hopper.

Claim.—First, the fluted or corrugated rollers C C, of about one inch or less in diameter, for expelling green peas or beans from their pods, when used in combination with the slots *b b*, for presenting the pods endwise to the rollers as explained.

Second, the endless apron B, in combination with the rollers C C, substantially as and for the purpose specified.

Third, the vibrating hopper E, provided with a slotted bottom, in combination with the rollers C C and endless apron B, for the purpose set forth.

No. 52,357.—R. L. BRYAN and J. A. BIGELOW, assignors to themselves and C. H. EVEREST, Franklin, Mich.—*Cartridge Box.*—January 30, 1866.—This invention consists in having a series of tubes placed within a case of cylindrical or other form, and provided at one end with a revolving disk, having a spout or conductor attached, and so arranged that the conductor may be adjusted consecutively in line with the several tubes within the box, and the cartridges in said tubes deposited in the weapon with the greatest facility.

Claim.—First, a cartridge box A provided with a series of tubes B to contain the cartridges, and having a rotating disk G, provided with a spout or conductor H fitted or applied at one end of it, and all arranged in such a manner that the spout or conductor may be brought in line consecutively with the cartridge tubes, and the cartridges placed or deposited in the piece or fire-arm with the greatest facility, while the filled tubes are kept closed and perfectly protected at all times, substantially as described.

Second, the elastic arm I attached to the disk G, in combination with the notches *e* in the flange *d* of the cover F, substantially as and for the purpose set forth.

No. 52,358.—W. R. CLOSE, assignor to himself and JONES T. DINSMORE, Bangor, Me.—*Water Wheel.*—January 30, 1866.—In this invention at the narrow and inner end of the scroll flume of a central discharge wheel a supplemental gate is swung vertically at about one-third of the distance from the inner or wheel side of said flume, as a regulator of the flow of water.

Claim.—The application of the regulator to the water wheel and its flume, and independently of the gate of the flume, substantially in the manner and so as to operate as specified.

No. 52,359.—Cancelled.

No. 52,360.—R. M. EWING, assignor to himself and L. H. COPE, Clinton, Ill.—*Horse Rake.*—January 30, 1866.—This invention consists in attaching springs to the rear cross bar, upon which lips bear, which are attached to the rake head hinged to the rear extensions of the thills so as to secure the return of the rake to a working position after the discharge of the load.

Claim.—The arrangement of the rake head F, hinges G G, springs J J, lips I I, in combination with the thills C C, in the manner as and for the purpose herein specified.

No. 52,361.—ROBERT HARPER, Chelsea, Mass., assignor to E. C. HARRINGTON, Boston, Mass.—*Railroad Turn-outs.*—January 30, 1866; antedated January 17, 1866.—This invention consists in so constructing the rails at the forks of a track for street cars so that a car may be drawn upon either branch of the road, avoiding the use of a movable switch, and the construction of a fixed wedge or tongue in combination with the rail to aid in turning the car.

Claim.—First, the rails *c c* constructed and used at the fork or branch of a railroad for cars to be drawn over by any kind of power, substantially as described, and for the purpose specified.

Second, the base *a a* of the rails constructed and used, substantially as described, and for the purpose specified.

Third, the tongue or wedge *b* constructed and used, substantially as described, and for the purpose specified.

Fourth, making the flange *c* of the said rails on a curve when combined with the turn-out rails and with wedge *b*, substantially as described and for the purpose specified.

No. 52,362.—C. F. JAURIET, Aurora, Ill., assignor to himself and A. J. AMBLER, Chicago, Ill.—*Spark Arrester.*—January 30, 1866.—This invention consists in arranging within the bounds of a spark arrester, a concave network or finely perforated partition between the conical cap of the stack and the upper end of the central pipe, the said partition bearing a draught passage through it corresponding with the opening in the central pipe; it further consists in the arrangement of the conical deflector, placed over the mouth of the central pipe with reference to the above-described network or partition.

Claim.—First, the combination of the cap or hood M and the network or finely perforated partition K, substantially as and for the purpose described.

Second, the arrangement of the cone J with the network partition K, or their equivalents, constructed and applied to the spark arrester or smoke stack, substantially as and for the purpose set forth.

No. 52,363.—HENRY KELLOGG, assignor to H. B. BIGELOW and DANIEL P. CALHOUN, New Haven, Conn.—*Quartz Mills.*—January 30, 1866.—This invention consists in two revolving disks with conical shaped surfaces revolving in different directions, and hung upon

shafts placed diagonally to each other, so as to bring the two faces of two grinding disks, parallel with each other.

Claim.—The two conical disks E and E′ constructed substantially in the manner described, having their respective shafts placed diagonally to each other in the manner herein fully set forth.

No. 52,364.—THEOPHILUS MAYHEW, New York, N. Y., assignor to himself and CHARLES LOCKITT, Brooklyn, N. Y.—*Pump.*—January 30, 1866.—In this invention the working cylinder is keyed down by a horizontal bar at its upper end, held in a side niche in the main cylinder by a spring, but which may be released by a forcible upward movement of the piston a little above its usual range. A large weight on the rope or rod still higher up serves to aid the descent of the piston, and also to guide it centrally.

Claim.—First, the combination with a pump bucket or plunger operated by a rope or chain, of a weight H arranged above the pump cylinder and constructed and applied within the well tube, substantially as herein described, to serve the purpose not only of assisting the downward stroke of the plunger, but that of a guide to the bucket or plunger.

Second, the spring catch constructed and applied to the pump cylinder, and arranged in relation with a groove *c* in the well tube, and with the pump bucket or plunger, substantially as herein described, whereby it locks the pump cylinder in the well tube during the pumping operation, but unlocks the said cylinder to permit the withdrawal of the whole pump from the tube by raising the bucket or plunger to a certain point, as herein set forth.

No. 52,365.—W. H. NICHOLS, assignor to himself and D. W. WATROUS, Chatham, Conn.—*Door Bell.*—January 30, 1866.—This invention relates to the front door bells of dwellings; also in cases where signals or alarms are to be given. The object of this invention is to obtain a simple and efficient hammer-operating mechanism, one which will not be liable to get out of repair, and is capable of being manufactured at a small cost.

Claim.—The slide E with the hammer rod G connected to it, as shown in combination with the spring D and bell or gong C, all arranged to operate in the manner as and for the purpose herein set forth.

No. 52,366.—HENRY B. NORTHUP, Sandy Hill, N. Y., and JAMES H. PATTERSON, Glen's Falls, N. Y.—*Stove-pipe Drum.*—January 30, 1866.—The draught or eduction pipe is of much smaller diameter than the drum, and extends down within the same mark to the bottom, the other pipe entering also near the top of the drum into the chamber around the draught pipe.

Claim.—A heat radiator for stoves composed of one or more drums, having eduction or draught pipes of much smaller diameter than the drums, extending down within them nearly to the bottom, substantially in the manner as herein shown and described.

No. 52,367.—EZEKIEL PHILLIPS and HENRY C. PHILLIPS, assignors to EZEKIEL PHILLIPS, Blackstone, Mass.—*Picker-staff Arrester for Looms.*—January 30, 1866.—The object of this invention is to furnish an elastic stop for arresting the picker staff at either extreme of its vibration, and to this end the invention employs a lever against which the picker strikes a spring acting upon such lever, and a regulator by which the force of such spring is regulated.

Claim.—The combination as well as the arrangements of the lever and the spring-adjusting mechanism, substantially as described, with the spring applied to the race beam and used for the purpose of gradually arresting the picker staff, as explained.

Also, the combination as well as the arrangement of the connecting rod *o* and the auxiliary arm *p*, or their equivalents, with the two levers combined with the one spring and applied to the opposite ends of the picker staff slot of the race beam, as described.

No. 52,368.—TIMOTHY K. READ, East Bridgewater, Mass., assignor to ELMER TOWNSEND, Boston, Mass.—*Sewing Machines.*—January 30, 1866.—In this invention, pivoted to the movable thread guide which delivers the thread to the hook of the crochet needle, is a lever with an eye which is coincident with the eye of the carrier, and allows the free passage of the thread except at the period when the cast off is about to enter the loop; at this stage the lever is shifted upon its axis sufficiently to draw and clamp the thread between its face and that of the thread carrier, and so prevent the take-up spring from pulling up and tightening this loop.

Claim.—A device or mechanism for relieving the loop of thread from the strain of the take-up spring, when the needle is ascending, to insure the entrance of the cast-off into the loop, substantially as described.

No. 52,369.—EDWARD F. ROGERS, assignor to himself and ALFRED K. HILLS, Boston, Mass.—*Lamp.*—January 30, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—The combination and arrangement of one or more vapor ducts *d d*, and the foraminous tube *e*, with the wick tube *a*, and the fluid reservoir *c*.

Also, the combination of the mass of sponge *f* or an equivalent absorbent material, with the reservoir C, the foraminous tube *e*, the wick tube *a*, and one or more vapor ducts *d d*, the whole being arranged substantially in manner and so as to operate as specified.

No. 52,370.—JOHN W. SMITH, Iowa Point, Kansas, assignor to himself, LEWIS HIDELBERGER, MORRIS PRINCE, and JOS. BACHRACH.—*Cartridge for Fire-arms.*—January 30, 1866.—In this invention a narrow wire gauze tube is placed in the middle of the cartridge for the purpose of excluding the powder, and forming a central cavity, through which the ignition is effected.

Claim.—The use of the wire gauze tube for the purpose of forming the cavity in the cartridge as aforesaid.

No. 52,371.—GEORGE K. SNOW, Watertown, Mass., assignor to himself, MARCH BROTHERS, PIERCE & CO., Boston, Mass.—*Paper Collar Band.*—January 30, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—The above-described manufacture or continuous band of paper formed with the bending crease and the imitation of stitching, or either, and so as to be capable of being cut up into a series of collars or wristbands, in manner as specified.

No. 52,372.—HERBERT ALLMAN, London, England.—*Lock.*—January 30, 1866.—In this invention there are a number of small wires, which, fitted at one end to the bolt near its head, extend back so as to be acted upon by the key; the several guards of the key, as it is turned to retract the bolt, adjust the wires, so that their free ends will enter corresponding holes in a bridge piece. There is also a dog actuated by the key, which locks the bolt when projected or retracted in the usual manner.

Claim.—The combination of the struts C, fence piece B, lever D, notches *d d'*, arranged relatively to each other and with the bolt A, to operate in connection with a proper key, in the manner and for the purpose herein specified.

No. 52,373.—GEORGE IRELAND, Birmingham, England.—*Bottle Handle.*—January 30, 1866; antedated January 26, 1866.—This invention consists in a handle that is adjustable on and easily removable from champagne or other bottles.

Claim.—Combining the encircling clasps C and D, and the neck clasp E, with the handle B, to form a self-adjusting handle for bottles, substantially as hereinbefore described.

No. 52,374.—AMOS H. BOYD, Medway, Mass.—*Sewing Machine.*—January 30, 1866; patented in England July 18, 1862.—This invention consists in the mode of operating thread-carrying arms above the table for the purpose of laying crossing ornamental threads on the surface of the cloth in the path of the needle; and also in so keeping these threads distended in the form of loops so as to make secure to the cloth a continuous series of loops, thus making a single or double fringe as desired. The length of these loops may be varied at will.

Claim.—First, the method of operating the arms which carry the embroidering threads or cords by means of the pin moving radially in diagonal slots in said arms, substantially as described.

Second, making the slots adjustable to vary the extent of movement of said arms, substantially as described.

Third, the employment, in combination with the arms G G', or their equivalents, for carrying the embroidering material, of the fingers $t\ t'\ t^2$, either collectively or singly, and operating substantially as described.

Fourth, in combination with the fingers $t\ t'\ t^2$, or either of them, operating as described, the device W, or its equivalent, for the purpose of interrupting the operation of said fingers in any required order, substantially as described.

No. 52,375.—GRANVILLE MOODY, Piqua, Ohio.—*Fireplaces.*—January 30, 1866.—This invention consists in placing in an ordinary chimney, for burning either wood or coal, over the hearth or grate, an air-heating furnace or chamber of either wrought or cast iron, with an induction pipe for introducing cold air from the outside of the building into said furnace or chamber, and a pipe or pipes for conveying the same air, after becoming heated in said chamber, into any room or rooms on the same level or above.

Claim.—First, the portable, ridge-roofed box furnace, constructed substantially as herein described, adapted to be set in an ordinary fireplace, as described, in combination with the induction and eduction pipes, as described.

Second, in combination with the box furnace, constructed, located, arranged, and operating substantially as described, the damper H, arranged and operating substantially as described.

Third, in combination with an air-heating furnace, constructed, located, and arranged as herein described, an inclined offset and cavity back of and below the apex of the roof of said furnace, as shown at G in the drawings, as and for the purposes described.

No. 52,376.—EMMETT QUINN, Washington, D. C.—*Automatic Boiler Feeders.*—January 30, 1866.—This device is intended to be applied to the boiler, or to a tube connecting therewith, in such a manner that the water is conveyed to the inside thereof and maintained while working at the level desired, and consists of an outer and inner tube, which may be cylindrical or otherwise, and both supplied at each end with ports or openings, so arranged that when applied to a boiler the induction ports on the outside thereof shall be closed when in

operation before the eduction ports on the end inside the boiler, or connecting therewith, are opened for the discharge of the water therein.

Claim.—A hollow interior tube, cylindrical or otherwise. enclosed and fitting neatly within a suitable case, both tube and case provided at or near each end with openings or ports so arranged that when applied to a boiler the induction ports on the outside of said boiler shall be closed when in operation before the eduction ports in the end inside the boiler shall be opened for the discharge of the water, substantially as described.

No. 52,377.—W. A. BARNES, Decatur, Ill.—*Pumps.*—February 6, 1866.—The object of this invention is the attaching of tubing to submerged pumps in such a manner that the pump may be placed at any point within the well, and the tubing attached both above and below. The pump is constructed of a cylinder and chamber, with a box divided into two compartments which communicate, one with the cylinder and the other with the chamber. The said box is provided at its ends with boxes communicating with compartments by means of valves. The main boxes are provided with conical flanges for the purpose of facilitating the adjustment of the tubing or pipes to the pump.

Claim.—First, the combination and arrangement of the pump cylinder A, and chamber D, with the box C, divided into two compartments *a a'*, which communicate respectively, one with the cylinder A and the other with chamber D, and provided at its ends with the boxes E E', which communicate with the compartments *a a'* by means of the valves F, substantially as described.

Second, as combined and arranged with the above, the taper or conical flanges G G' of the boxes E E', for the purpose of facilitating the adjustment of the tubing or pipes to the pump, as set forth.

No. 52,378.—JAMES I. BENHAM, New London, Conn.—*Cloth-measuring Machine.*—February 6, 1866.—This machine is designed for measuring cloth, carpeting, ribbons, and dry goods generally, and it consists of two cylinders of different diameters, the smaller one being arranged over the larger. On the shaft of the larger cylinder is placed an eccentric, having a metal strap upon it, to which is attached a pawl that engages with a ratchet working upon a fixed axis which projects from the framing. It is provided with a hub to which an index is attached. Attached to the frame, also, is a circular graduated plate, through the centre of which passes the shaft of the larger cylinder. Above the said dial is also another dial, to which it is attached by means of a bar, and through which additional dial passes the hub of the ratchet, the index being in front of the same.

Claim.—First, the two cylinders B E, in combination with the dials M N, ratchet J, pawl I, eccentric G, and indexes *b f*, all arranged to operate substantially as and for the purpose set forth.

Second, the roller R, and flat board V, fitted in frames O O, when arranged in relation to and used in combination with the cylinders B E, substantially as and for the purpose specified.

No. 52,379.—EDWIN BENNETT, Philadelphia, Penn.—*Fruit Jar.*—February 6, 1866.—This invention consists of a stopper having screw threads cut around its sides. When the stopper is placed in the jar the screw threads sink into an elastic band which is held in a recess. The stopper has an aperture through its centre which is closed by an elastic plug, the latter being pierced through its centre in order to allow sirup to be poured through it by means of a funnel. When the funnel is withdrawn the aperture is closed by the elasticity of the stopper.

Claim.—A fruit-preserving vessel having its stopper cap secured air-tight by means of screw threads *c' c'*, acting in combination with an elastic band D secured around between the stopper and the inner sides of the mouth or neck of the vessel, substantially as described.

Also, the use of a pierced elastic plug E, in combination with a stopper C, substantially as and for the purpose described.

No. 52,380.—CHARLES BOURGEOIS, Buffalo, N. Y.—*Steam Gauge.*—February 6, 1866.—The object of this invention is the introduction into general use of a steam gauge internally illuminated, so that the figures on the dial plate and index hand can be plainly seen in dark situations without the use of other light. Its novelty consists in the combination of a lamp with a steam gauge and transparent index plate, whereby the gauge is lighted internally and the figures of the index plate rendered visible.

Claim.—The combination of the lamp D with a steam gauge and transparent index plate B, and thereby internally light the gauge and make the figures of the index plate visible, substantially in the manner and for the purpose set forth.

No. 52,381.—DAVID B. BOYNTON, Boston, Mass.—*Boot-blacking Ottoman.*—February 6, 1866.—This invention consists of a box trimmed like an ottoman, with a suitable lid, under which is a foot-rest which can be elevated by a cam wheel, and provided with a drawer for brushes, and spaces for other blacking materials.

Claim.—First, the combination of the cam M with the foot-rest K, and with the ottoman for raising and lowering said foot-rest, substantially as described.

Second, the combination of the foot-rest K, cam M, brush drawer G, blacking receptacle R, and scraper V, with the ottoman, substantially as described and for the purposes set forth.

No. 52,382.—Edward Brown, South Otselic, N. Y.—*Machine for winding Cord into a series of united Skeins.*—February 6, 1866.—In this machine there are two face wheels looking towards each other, and rotating in concert. The first skein is wound upon pins placed in one plate; it is then stretched between the plates and wound into a solid stick; this, without cutting off, is backed in a rotating box attached to the face plate, and the continuous cord wound into another skein, and so on, any desired number of skeins or "sticks" being united

Claim.—First, the arrangement of the fixed and movable standards *b* and *g*, and connected gearing, together with the loop-end crank-arms *d'* and *g'*, on and between which the skein is hung and cross wound, all operating together substantially in the manner described.

Second, the revolving box *t*, having adjustable projecting arms *a' a'*, operating as and for the purpose specified.

No. 52,383.—Benjamin F. Burnett and Thomas Vandevort, Phelps, N. Y.—*Wind Wheel.*—February 6, 1866.—The wheel consists of a hub and a series of triangular sails obliquely feathered, and movable in relation to the hub. Each sail is divided transversely into sections, each pivoted at its centre, and all connected by a rod having a weight at its outer extremity to regulate the velocity by centrifugal force, overcoming a spring holding the sections close to receive the wind. A vane opposite the wheel keeps it to the wind; an intermediate hollow perpendicular column affords bearings to the horizontal shaft, a crank with such bearings operating a pitman, from which power is communicated for any purpose.

Claim.—First, the balls E E, or their equivalents, attached to the movable sections of the stationary sails, in combination with the spring *a*, or its equivalent, for the purpose of regulating the revolving motion of wind with stationary sails, the whole constructed and operating substantially in the manner and for the purpose above described.

Second, in an apparatus for utilizing the power of the wind by means of wind wheels, we claim the pitman K, placed centrally in the post by which the wind wheel is supported, in combination with the lever X, working through an aperture in the said post, substantially in the manner and for the purpose described.

Third, in an apparatus for utilizing the power of the wind by the use of a wind wheel, the above-described mode of connecting the pitman K with the lever X—that is to say, by passing the pitman through the lever, and then, by means of a flange above and below the lever, enabling the wind wheel to revolve around on its vertical shaft, and carrying with it the pitman, without interfering with the harmonious action of the machinery, substantially as above described.

Fourth, in an apparatus for utilizing the power of the wind by means of a wind wheel, the combination of the lever L and the slide *m*, constructed and operating substantially in the manner and for the purpose above set forth.

No. 52,384.—T. Butterworth, Shelbyville, Mo.—*Corn Harvester.*—February 6, 1866.—The stalks are cut by stationary knives, so arranged on the machine as to come in contact with the corn as the machine progresses, the corn being drawn over toward the knives by revolving reels, and received upon arms which are tripped when bunches of sufficient size have accumulated, in order to properly deposit the bunches.

Claim.—First, the combination of the obliquely-set knives with the reels revolving on the inclined shafts, and provided with the angular arms, as described.

Second, the combination of the master-wheel F, tooth *m*, toothed-wheel O *n o*, lever Q, pawls L, and ratchet M, for tripping the catcher to discharge its load, as described.

Third, the armed catcher K, in combination with the ratchet M, triggers L L, and lever, or other equivalent tripping device, for the intermittent dropping of the gathered corn.

No. 52,385.—John H. Carr, Palo Alto, and Edward Andrews, Pottsville, Penn.—*Mode of Detaching Tow Lines.*—February 6, 1866.—This invention consists in providing means of detaching the tow-line from the horse or boat while towing, or under strain from any cause, thereby preventing the horse from being drawn into the water.

Claim.—The combination and arrangement of the plates A A, tow-iron C, lever B, and spring E, held together by the post F and pivots [1] and [2], substantially as described.

No. 52,386.—Antonis Casadey, Philadelphia, Penn.—*Artificial Stone.*—This invention consists in heating gypsum, after being formed into blocks, until it is perfectly calcined. The blocks are then exposed to the air, after which they are placed in a solution of alum and potassa in water, and then dried and polished.

Claim.—First, an artificial stone made from gypsum by calcining the same and subjecting it to the action of a chemical bath, substantially as herein described.

Second, imparting to the gypsum the appearance of veined marble or fancy stones, by introducing coloring matter into the bath, as set forth.

No. 52,387.—William J. Chaplin, Dowagiac, Mich.—*Binding Guide for Sewing Machines.*—February 6, 1866.—In this invention a single plate, cut and bent into the proper shape, forms the two guides for the edges of the binding, the straight guide for the edge of

the cloth, and the base plate for attaching the whole to the table. The slides for adapting it to different widths of binding, and the binding holder or presser, are formed of separate pieces.

Claim.—The binder in one piece, cut from a single metallic plate, and formed as set forth, in combination with the adjustable binding holder, the whole being adjustable on the bed plate of a sewing machine, substantially as described.

No. 52,388.—CHARLES B. CLARK, New Haven, Conn.—*Sash Fastening.*—February 6, 1866.—This invention consists of a plate which has a curved or segment rack attached to it, and two curved arms which work in a fixed pin on the plate; said arms, by their curvature, extending around in front of the rack. Two toothed rollers are secured to the ends of the arms, and the toothed portions engage with the rack; on the pin there is also fitted a lever which is allowed to turn freely, and is provided with a projection, which, by actuating the lever, may be made to press against the inner end of either arm, and move the rollers outward.

Claim.—The rack B and the arms C C′, provided with rollers D D, having their peripheries partially toothed, when said parts are used in combination with a single lever E, arranged substantially as shown, to operate either arm C or C′, as set forth.

No 52,389.—ORRIN R. CLARK and FRELON H. SLYTER, Marengo, Ill.—*Shank Laster.*—February 6, 1866.—This invention consists of a handle and lever, with jaws riveted to a short leather strap, the other end of which is fixed to the handle. An eccentric attached to the jaws allows the same to be opened and brought together.

Claim.—The handle or lever A A, strap C, jaws D D, and eccentric E in combination, arranged and operated in the manner and for the purpose set forth.

No. 52,390.—AUGUSTUS J. COLBY, New York, N. Y.—*Skeleton Skirt.*—February 6, 1866.—This invention will be understood from the claim.

Claim.—A hoop skirt made of a series of springs arranged at a vertical inclination to the central vertical axis or direction of the length of the skirt, substantially in the manner described, and for the purposes specified.

No. 52,391.—G. W. COREY, Port Jervis, N. Y.—*Manufacture of Blacking.*—February 6, 1866.—This invention consists of a composition of India-rubber, gutta percha, beef tallow, neat's-foot oil, beeswax, lamp black, rosin, and spermaceti.

Claim.—The composition for water-proof blacking made up of the ingredients in the manner and of the quantities as herein recited.

No. 52,392.—EDWARD DAVIDSON, Providence, R. I.—*Chain Hook or Cable Stopper.*—February 6, 1866.—To one end of the shank of the chain hook are two jaws, the outer ends of which are of a hook form. The cap or clasp is hung upon the common centre-pin of the jaws, and on the under side of the said clasp is a prong which enters and passes through the jaws, so as to hold them tightly together and firmly clasp the chain.

Claim.—The construction of the swinging jaws *c c* of the chain hook with the holding cap or clasp B, having a prong *f*, arranged together substantially as and for the purpose described.

No. 52,393.—L. L. DAVIS, Laconia, N. H.—*Bolt-heading Machines.*—February 6, 1866.—This invention consists in the arrangement of grooves upon the top of the machine to be used for forming the sides of the heads of the bolts, and also in the arrangement of a scale to determine the length of the bolt.

Claim.—First, constructing one or more grooves, channels, or dies, in the upper faces of the standards A and B herein described, or either of them, for the purposes and in the manner substantially as set forth.

Second, the combination with the bolt-heading machine herein described of an adjusting scale, substantially as set forth.

No. 52,394.—NATHAN DAY, Ithaca, Ohio.—*Boot Crimp.*—February 6, 1866.—This invention consists of a device for crimping the uppers of boots, wherein a jointed crimping board is adapted to be used in combination with a similarly jointed clamp; also in the special arrangement of a lipped board and stretcher, and in the combination of their accessories.

Claim.—First, the arrangement of the jointed and lipped crimping board D E N N′ and stretcher J K L M, for the purpose set forth.

Second, the described combination of horse A, jointed clamp B C B′ C′, jointed crimping board D E, loop I, treadle H, and pin G, for the purpose explained.

No. 52,395.—NICHOLAS A. DEDERER, Greene, N. Y.—*Harvesting Machine.*—February 6, 1866.—This invention consists in such an arrangement and application of the caster wheel at the grain end of the platform as will enable it to act as a driving wheel of the rake attachment, whenever the machine is being drawn directly forward, and also cause it to be swung around out of gear when the machine is being turned or backed.

Claim.—First, in a reaping machine an auxiliary wheel running upon the ground and swinging by an arm from a pivot, and communicating motion to an auxiliary driving shaft

whenever the machine is moving directly to the front, and automatically disengaging itself from the shaft when the machine is being turned, by means of a clutch upon the end of the shaft, substantially as and for the purposes set forth.

Second, the combination of the wheel B, with its attachments C L and H, the clutch D, and ratchet and pinion E F, substantially as and for the purpose set forth.

No. 52,396.—NICHOLAS A. DEDERER, Greene, N.Y.—*Harvester Rake.*—February 6, 1866.—In this machine the rake is vibrated back and forth across a slatted platform by toggle arms worked by a lever, forced forward and back by cams upon the shaft to which it is attached. A dumping cradle is placed upon the outer end of the platform, provided with arms, over which the rake head passes, thereby preventing the tilting of the cradle until the gavel is compressed, when it is discharged by the further motion of the rake. A shield hinged to an arm outside the platform prevents the gavel from being thrown too far and scattered.

Claim.—First, the combinations of the cams L M, toggle G, and pitman H, with the vibrating rake arm, substantially as described.

Second, the combination of the vibrating rake, the slatted platform, and the compressing and dumping cradle, arranged and operating substantially in the manner described, for the purpose set forth.

Third, the combination of the sweep rake and dumping cradle with the hinged shield, substantially as and for the purpose described.

Fourth, the dumping cradle, arranged and operating as described.

No. 52,397.—ALFRED DE LENTILHAC, Tamaqua, Penn.—*Artificial Fuel.*—February 6, 1866.—This invention consists in grinding coal dust to a fine powder and mixing it with vegetable gluten and coal tar, and then moulding it into bricks, which are placed in sheet iron boxes and baked in an oven.

Claim.—An artificial fuel composed of fine coal dust, vegetable gluten, and coal tar, pressed into bricks or blocks, dried, then placed in hermetically sealed iron boxes, and baked or coked in a hot oven, substantially as and for the purpose described.

No. 52,398.—HENRY W. DENNIS and JOHN BAKER, Hopkinton, Mass.—*Thread Cutter for Sewing Machines.*—February 6, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—A stationary knife or cutter with its edge laying across the needle throat in the table of a sewing machine, so that it will intercept and sever the thread by simply pushing the work toward it, substantially as described.

No. 52,399.—R. H. DEWEY, PITTSFIELD, Mass.—*Chimney Holder and Fastening.*—February 6, 1866.—This invention consists in the combination of sliding hooks with a plate, so arranged that they will easily hold chimneys of various diameters.

Claim.—The combination of the sliding hooks *f* with the ring or plate *n*, arranged together and operating substantially in the manner described and for the purpose specified.

No. 52,400.—F. DURAND, Seymour, Conn.—*Shoulder Brace.*—February 6, 1866.—This invention consists of a band embracing the shoulders in front. Its lower ends are attached to vertical lacing bands on the back a little below the line of the armpits, its upper ends passing over the shoulders and secured to the same by vertical lacing bands a little higher up than the former. These lacing bands may be laced to each other, or they may be laced in with a corset or bodice.

Claim.—As an improved article of manufacture, the shoulder brace *h l m n o*, constructed as herein specified, so as to be adapted for use either separately as a brace, or connected by the lacing cord to a corset or bodice.

No. 52,401.—A. P. DURANT, Atlanta, Ill.—*Gang Plough.*—February 6, 1866.—This invention consists in the peculiar arrangement of the plough beams in front of the wheels in connection with the frame of the machine, and in the manner in which they are raised out of the ground when necessary by trussed or rigid levers, which at the same time serve to steady them laterally.

Claim.—First, uniting the two ploughs M N to a single beam G, where said beam is arranged between the frame C C′, and hung on a pivot to the front end thereof and forward of the axletree, substantially as shown and described.

Second, the two levers S S′ when united together in the manner described, and connected to the rear end of the plough beam G, for the purpose of keeping said beam from twisting, or the ploughs from slewing or "creeling" out of their proper path, and for the purpose of raising them out of the ground, as set forth.

No. 52,402.—JOHN H. ELWARD, Polo, Ill.—*Evaporator.*—February 6, 1866.—This invention consists in providing the bottom of the evaporating pan with a series of bolts, which project down into the tubes that pass through the water jacket formed by the vessel. The bolts are provided with heads, which project above the bottom of the evaporating pan.

Claim.—First, the method described for boiling cane juice, by applying the heat at two levels in the liquid, substantially as set forth.

Second, the evaporating pan, constructed, arranged, and operating substantially in the manner set forth.

Third, the combination of the pan with the boiler, when constructed, arranged, and operating substantially in the manner described.

No. 52,403.—ADOLPH FABER, Washington, D. C.—*Paper Clamps.*—February 6, 1866.—This device is composed of one or more plates provided with any number of wedge-shaped surfaces, and also with slides so arranged that by moving the slides on the surface of the plates the top and bottom plate, or the top plate and the inside surfaces of the slides, will be brought close together, and thus clamp the paper by the movement of the slides upon the wedges.

Claim.—As a new and improved clamp the combination of the open slides *s* with the inclined planes *a* and *b* or *a* alone, substantially as alleged.

No. 52,404.—GEORGE FLEIG, Philadelphia, Penn.—*Rocking Chair and Fan*—February 6, 1866.—This invention consists in attaching to a rocking chair a revolving fan, the rocking of the chair imparting, through the medium of a bow rod and cord, a reciprocating motion to the fan.

Claim.—The chair A, the bow rod E, the fan F, and the chords or straps *c c' d d'*, arranged and operating substantially as herein specified and described.

No. 52,405.—JULIAN A. FOGG, Salem, Mass.—*Coffin.*—February 6, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, cutting out of a coffin a portion of the sides at the head part thereof deep enough to exhibit the bust and head of the corpse, substantially as specified.

Second, the pieces D, so arranged that they will close the space cut out at the sides of the coffin, substantially as described.

Third, the use, in combination with a coffin so constructed, of a glass E, set in the lid in such manner that when the lid is open, the inscription on the plate can be read, and that when the lid is closed the face of the body can be seen, substantially as specified.

No. 52,406.—M. N. FORNEY, Baltimore, Md.—*Locomotive.*—February 6, 1866.—This invention is clearly described by the claims.

Claim.—First, the combination, and only the combination, of a fuel bin or water tank, with a depressed or inclined fire-box in locomotives, arranged and operating in the manner and for the purposes herein above substantially set forth.

Second, the combination, and only the combination, of these three elements: first, a locomotive having all the weight of the engine and boiler upon the driving wheels; second, a guiding or leading truck or tender for carrying the water or fuel, or both, or so much of them as is not carried as above shown; and third, a rigid frame connecting the locomotive and tender, all arranged and operating substantially as above set forth.

No. 52,407.—JOSEPH FOWLER, Rahway, N. J.—*Ploughs.*—February 6, 1866.—This invention consists of a vertical plate extending from the subsoil blade to the plough beam, and in which are holes receiving bolts that attach an adjustable share, which can be raised or lowered according to the depth of furrow required.

Claim.—The plate *c*, extending from the beam to the blade *d*, in combination with the movable or adjustable moldboard *f*, attached to said plate *c*, at any desired height, as and for the purposes set forth.

No. 52,408.—TITUS D. GAIL, Newport, Ill.—*Washing Machine.*—February 6, 1866.—This invention is described by the claim and shown in the engraving.

Claim.—The rotating and revolving corrugated cones journalled at their apexes by the headed pins in receded slots in the post, and at their basis in pivoted links, as described, in combination with the corrugated bed, the whole being arranged and operated substantially as described and represented.

No. 52,409.—JOSIAH H. GIBBS, Grand Rapids, Mich.—*Machine for Boring Blinds.*—February 6, 1866.—This invention consists of a frame with a boring arbor and proper bit, and at the end of the frame is placed a plate cam, in the face of which is a spiral groove, and a rack with teeth. In the rear is a pinion wheel gearing into the carriage, carrying the stuff to be bored. By operating the rack on the cam, the carriage is set along the distance of one hole, and by varying the rack in the cam, the distance between the holes is varied.

Claim.—The cam P, formed of a spiral groove made in the side of a wheel, in connection with the rack Q, fitted in said groove, the toothed wheel N, arm R, connected with the rack Q and the sliding rack M, all arranged in connection with an auger or bit or other tool to operate in the manner substantially as and for the purpose set forth.

No. 52,410.—J. HARRIS, Green Lake, Wis.—*Car Coupling.*—February 6, 1866.—This invention consists of an automatic car coupling, the drop-pin of which is raised by a foot lever,

and held up by ca'ching in a spring lever above it, which catch is disengaged by collision in coupling, thus allowing the pin to descend.

Claim.—The link B attached to the drawhead A, in connection with the drop or coupling pins D, foot lever or treadle E, and catch bar H, all arranged and combined to operate substantially in the manner as and for the purposes herein set forth.

No. 52,411.—Louis J. Hawley, Baltimore, Md.—*Lightning Rod.*—February 6, 1866.—This invention will be understood from the claim.

Claim —The lightning rod constructed as described and represented, consisting of a central copper strip, enclosed between lap joints, iron side pieces, the points of connection being provided with interposed zinc plates.

Also, the supplementary conductor, formed by the points of the prolonged wire band D D, as described and represented.

No. 52,412.—Charles G. Herbert, New York, N. Y.—*Camp Stool.*—February 6, 1866.—This invention consists of telescopic legs, formed of a brass tube, and a wooden inner piece, fastened at the junction by a round furnished with a tenon and lugs. The tenon passes through openings in both the pipe and extended wooden leg, and holds them in position. The top of the hollow tube is slotted vertically, and receives the spring pieces of the canvas covered seat.

Claim.—The extension legs formed of pipes containing sliding rods or tubes, in combination with the cross-bar that connects the legs, and keeps them extended, as and for the purposes set forth, and in combination with such legs and cross-bar, the cross rails and seat fitted substantially as specified.

No. 52,413.—Thomas M. Hill, Eaton, Ohio.—*Corn Planter.*—February 6, 1866.—This invention consists in an arrangement of revolving hinged arms, attached to the axle of the machine, and which act upon levers, having each three slides working in cylinders, and operating in such a manner as to drop the corn at suitable intervals. A foot brake is also used, by which the motion of the driving wheel may be stopped when desired.

Claim.—The described arrangement of the hinged arms H I I′, and the spring lever O, which latter operates the slides in the seeder, substantially as described.

Second, the arrangement of the slides P Q R, lever O, and cylinder K, operating substantially as described and represented.

No. 52,414.—J. A. and H. A. House, Bridgeport, Conn.—*Elastic Shield for Trunks.*—February 6, 1866 —This invention consists of a shield of India-rubber applied to the trunk, being attached by means of nails or screws.

Claim.—The vulcanized rubber or gutta-percha package guard above described, constructed and operating substantially in the manner set forth.

No 52,415.—William W. Hubbard, Philadelphia, Penn.—*Bolt-screwing and Nut-tapping Machine.*—February 6, 1866.—This invention consists in arranging upon a large horizontal rotating table a series of spindles for tapping nuts and screwing bolts. The spindles radiate from the axis of said table, upon the outer edge of which are carriers, which receive the bolt or nut from the hand of the operator, and are moved up to engage with the tap or dies by a cam. When the bolt has been threaded far enough, it strikes a pin, which opens the jaws of the dies, and a weight draws the frame back. The nuts pass on to the shank of the tap, and are taken off when the shank is full.

Claim.—First, the revolving plate F, with its rotating spindles L L′, in combination with the within described cutting and feeding devices or their equivalents, the whole operating substantially as specified.

Second, the carriers N, with their jaws *m m*, in combination with cam *p*, lever Q, and plate R, the whole being arranged and operating substantially as and for the purposes described.

Third, the cam plate T, and its weight *q*, or its equivalent in combination with the revolving plate F, and its carriers N N′.

No. 52,416.—George Hunzinger, New York, N. Y.—*Reclining Chair.*—February 6, 1866.—This invention consists in placing the round at the junction of seat and back, in a slot formed in the top of the front leg, allowing a nearly vertical movement of the round as the chair is reclined. The top of the front leg is connected by a pin, with a notched groove in the arm piece.

Claim.—First, the cross-bar *e* at the junction of the seat and back, in combination with the folding or X legs, the ends of said cross-bar occupying grooves or mortises in said legs, as and for the purposes specified.

Second, the arms *k*, in combination with the folding X legs *c* and *d*, and the back frame *h*, said arms extending from the upper ends of the legs *d* to the back frame *h*, substantially as and for the purposes set forth.

No. 52,417.—R. H. Ingersoll, Washington, D. C.—*Billiard Register.*—February 6, 1866.—This invention consists of two sets of works and recording dials. The means for

operating them being distinct, but are connected in restoring the fingers to the zero point. It further consists in an independent connection to the rotating dial, so that the count to be registered will be manifested to the eye.

Claim.—First, the combination of the claw H, wheel I, and prolonged plate K, as and for the purpose described.

Second, the combination of the prolonged plate K, rack L, pinion M, and figured dial O, operating as described.

Third, the combination of the spring slide U, pawls V V, wheels I I, and springs W W, substantially as described and represented.

Fourth, the lever Y, in its combination with the arms *f f*, wheels I I, and pawl Z.

Fifth, the described combinatien of the wheels I I, lug *k*, notch *j*, incline *g*, and pin *h*.

Sixth, the slide U, spring *p*, prong *e*, lever Y, and arms *f f*, operating substantially as described and represented.

No. 52,418.—Ebenezer C. Jayne, Philadelphia, Penn.—*Printing on Glass, Porcelain, &c.*—February 6, 1866.—This invention consists in transferring letters or other characters from printed or painted characters superimposed upon glass or other like material directly upon the surface of the same by a rubbing or rolling pressure applied, progressing in lines of any form or kind, so that every portion of the printed or painted character will be forced in close and intimate contact with the glass.

Claim.—First, transferring letters or other characters from a sheet of printed or painted paper, or other material superimposed upon glass or porcelain or other material, directly to the surface of said glass or other material by a rubbing or rolling pressure, applied progressively in lines singly or in a series, circular, straight, or otherwise, or in one or more continuous line or lines, spiral or otherwise, in such manner and so close one line to another as to force consecutively every portion of the painted or printed character in close contact with said glass, porcelain, or other material.

Second, in the process or operation of transferring by pressure printed or painted characters from sheets of paper or other material to the surface of glass, porcelain, or other material, the employment of a yielding presser, or a series of yielding pressers, in combination with a yielding bed, substantially as set forth.

Third, a holding device, substantially as and for the purpose set forth.

Fourth, the combination of a revolving shaft or spindle F, screw rod *m*, guide bar *l*, and clutch, operating substantially as described.

Fifth, a pressing device, in which one or more yielding pins or rollers are used, substantially as described.

Sixth, the combination of a revolving shaft F, screw rod *m*, guide bar *l*, and a clutch, with a pressing device and a holding device, substantially as described.

No. 52,419.—Paul Jeanne, Brooklyn, N. Y.—*Tobacco Pipe.*—February 6, 1866.—This invention is described by the claim.

Claim.—A tobacco pipe of any material or form made in two parts, hinged together at the bottom of the bowl, and secured by bands at its top and heel, the seam being made smoke and air tight by packing, the whole being constructed substantially as described and for the purposes set forth.

No. 52,420.—Thos. M. Kane and Conrad Brown, Goshen, N. Y.—*Caster for Furniture.*—February 6, 1866.—This invention consists of a cylinder cast in halves with curved flat springs riveted in the inside, and apertures in which the top ends of the springs play; the springs fit into a neck on the stem or shaft of the caster and prevent it from falling out.

Claim.—The construction of the divided cylinder B with springs C, when constructed, arranged, and combined as herein described, and for the purposes set forth.

No. 52,421.—Alford Lamb, Skaneateles, N. Y.—*Cultivator.*—February 6, 1866.—This invention consists of a triangular frame composed of iron rods and cross timbers. The braces coming from the rear beam are united to the front standards; the shafts are attached to the beam by a swivel, and by means of a gauge it may be so adjusted as to regulate the depth of the cut.

Claim.—First, the arrangement for attaching the shafts to the beam by means of the swivel F and gauge G, for regulating the depth of the cut as set forth.

Second, the arrangement of the frame E D C and standards A B H, with the frame K and handles, all constructed and combined, substantially as and for the purposes set forth.

No. 52,422.—Thos. A. Lane, Cincinnati, Ohio.—*Wheels and Axles.*—February 6, 1866.—This invention consists in so constructing wheels of carriages that all the spring or elasticity required by the vehicle may be in the wheels themselves.

2. In substituting for axles, spindles or shafts firmly secured to the hub and divided at their middle and their ends, journaled so that each wheel will run independently and yet possess the necessary stability.

Claim.—First, a carriage wheel, provided with curved and elastic metallic spokes D, sub-

stantially as described, rigidly united to a spindle or shaft to be coupled to, but to revolve independently of the shaft of the corresponding wheel.

Second, a wheel whose spokes consist of yielding metallic plates, coinciding in form with a circular or other simple arc.

No. 52,423.—JOEL LEE, Galesburg, Ill.—*Clothes Wringer.*—February 6, 1866.—This invention consists in gearing the rollers by a pinion and two crown wheels, and adjusting the pressure upon the rolls by levers which may have weights attached to them, all being secured by hooks to a wash-tub.

Claim.—The arrangement of levers B B, hooks and links G G, follower F, guides and bearings H H, with the pinion E, the crown wheels D D, and rubber rolls C C.

No. 52,424.—T. LESPÉS, Cold Spring, N. Y.—*Manufacture of Sugar.*—February 6, 1866.—This invention consists in cutting the cane into small pieces, after which it is boiled in suitable macerators for the purpose of separating the albumen and other impurities, the juice being filtered by the pieces of cane. The juice is passed from the macerators into a trough where the scum is separated, and the juice is then placed in a reservoir, the bottom of which forms a filter through which it passes into a decolorizing column which contains a series of zigzag partitions. In passing through this column the sirup is met by a current of sulphurous acid gas, by means of which the decolorization is effected; it is then evaporated and finished in the usual manner.

Claim.—First, the within described process of extracting the juice from cane or other plants containing sugar, by cutting the same up into short pieces, and boiling these pieces in suitable macerators, substantially in the manner and for the purpose set forth.

Second, using the pieces of cane during the macerating process as filtering medium, as and for the purpose described.

Third, the tilting trough F, in combination with the car *d*, macerators H, and elevator E, constructed and operating substantially as and for the purpose set forth.

Fourth, the pans I O, made entirely of wood, and provided with inclined troughs J, substantially as and for the purpose described.

Fifth, the curved pipes L L′, in combination with the pans I O, and their inclined troughs J, constructed and operating substantially as and for the purpose set forth.

Sixth, the decolorizing column N, constructed and operating substantially as and for the purpose described.

No. 52,425.—RUSSELL R. LEWIS, New York, N. Y.—*Well Borer.*—February 6, 1866.—This invention consists in the employment of a taper reamer to bore the well of a diameter larger than the tube which is to be placed in the well, and in forming the top of the borer and the bottom edge of the tube with matched ratchet teeth, so that, as the borer is turned, the tube will be lifted by the cam planes, or ratchets, and allowed to drop upon the borer with sufficient force to give it a proper bite in its progress. When the well is sunk to a sufficient depth the rod that drives the borer can be withdrawn and the tube left in place.

Claim.—First, automatically controlling the bite of the borer by the gravity of the tube when acting by an intermittent blow, substantially in the manner described.

Second, the cam planes or ratchet teeth on the top of the reamer and the bottom of the tube, substantially as and for the purpose set forth.

No. 52,426.—THOMAS LINFOOT, Cincinnati, Ohio.—*Spring-bed Bottom.*—February 6, 1866.—This invention relates to that class of bed bottoms in which a series of timber slats rest upon a spiral or other spring of wire. A sliding head moves upon guides in the side rails. Between the end rails and the sliding head is placed a spring which presses the said head toward the centre of the bed. The sliding head and end rail are blind-mortised to receive the ends of the slats and hold them securely in position.

Claim.—The arrangement of dovetailed rails A *a* A′ *a*, cross slats D, helical springs E, sliding head F, and helical springs G, in the described combination with the slats I, whose ends occupy mortises in the rail B′ and sliding head F, respectively, as set forth.

No. 52,427.—LEON LOBENSTEIN, New York, N. Y.—*Hoop Skirt.*—February 6, 1866.—In this invention the hoops are suspended by links of metal in lieu of tape.

Claim.—A skeleton skirt for ladies, formed with wire or chain connections between the springs or hoops of the skirt, as and for the purposes set forth.

No. 52,428.—ALBERT MARCELLUS, Pittsford, N. Y.—*Potato Digger.*—February 6, 1866.—In this invention the plough consists of a broad flat share with a mould board on each side. The bearing wheels are broad and hollow with openings upon the inside into which both furrows are turned with the potatoes; the soil is sifted out through interstices in the wheels and thus separated from the potatoes.

Claim.—First, the ground wheels G of potato diggers, when constructed substantially as and for the purposes set forth.

Second, the combination of the ground wheels G with the double mould-board plough B, they being so arranged, relatively, that the wheels shall receive the furrows from the plough, as and for the purposes set forth.

No. 52,429.—A. S. MARKHAM, Bushnell, Ill.—*Cultivator.*—February 6, 1866.—This invention consists in attaching the standards or pendants to the front cross-bar of the cultivator frame by means of bolts passing through perforated plates secured to the frame, whereby the adjustability of the ploughs in a lateral direction is attained with great facility and freedom of movement.

Claim.—The securing of the pendants J on the rod K by means of bolts *i* passing through any of a series of holes in plates N N attached to the draught pole, substantially as shown and described.

No. 52,430.—OLIVER H. and JOHN A. MARSTON, Centre Sandwich, N. H.—*Heel Cutter.*—February 6, 1866.—This invention consists of a knife placed on a movable carrier with the cutting edge of the knife in a straight line with the axis of the heel-rest post, and a journal on which the carrier turns; an elastic belt is employed to elongate the handle.

Claim.—The arrangement of the knife I on the movable carrier H with the cutting edge of the knife placed in a straight line with the axis of the heel-rest post B and the journal *b* on which the carrier turns, the same insuring to the knife during its passage around the heel rest the best working positions for cutting the heel or leather to conform to the same.

Also, the arrangement of the elastic or rubber belt F, the lever D, the carrier H, the knife I, the heel rest A, and its post B.

Also, the combination and arrangement of the annulus E with the heel-rest post B and the rubber or elastic band F applied to the lever D, supporting the knife carrier H, to operate with the heel rest A, as specified.

No. 52,431.—SYLVESTER G. MASON and CALVIN B. GILL, Rochester, N. Y.—*Pump.*—February 6, 1866.—This invention consists of a hollow piston rod and hollow piston. A valve extends from side to side of the piston, the centre enlarged to admit the enlarged tube forming the axis of the valve; said valve has two wings and waterways into the hollow centre, which is continuous with and of the same calibre as the interior of the piston rod. On each side of the valve-box a transverse oblique partition permits the ascent or the descent of the water, as the movement of the piston determines to one or the other side of the piston, and thence into the valve-box and upward through the side. These valves are of equal length with the piston, and an end piece is let in by dovetailing to enclose them.

Claim.—The combination of the piston, consisting of the rim *d*, chamber *f*, and partitions *g g*, and the valve consisting of the hollow axis or bearing *i*, and wings *k k*, operating substantially in the manner and for the purpose herein set forth.

Also, the special construction of the piston, consisting of the rim *d*, chamber *f*, and inclined partitions *g g*, arranged and operating substantially as described.

Also, a piston having partitions *g g* situated respectively on opposite sides, and inclining in opposite directions, with induction ports *h h'* in the opposite angles, above and below, for the purpose of admitting water at the opposite strokes, and balancing the piston, substantially as described.

Also, the special construction of the valve, consisting of the hollow axis or bearing *i*, and wings *k k'*, and provided with the induction ports *l l'*, substantially as and for the purpose set forth.

Also, securing the valve D in its chamber *f* by providing the removable bottom G with the dovetailed edges *m m* fitting in corresponding notches *n n* of the rim, as herein specified.

No. 52,432.—CHAS. A. MAXFIELD, New York, N. Y.—*Machine for Making Paper Boxes.*—February 6, 1866.—This invention consists of certain mechanism for pressing strips of glued paper upon the edge of the box and upon the cylindrical sides of the same; also turning the edges of said paper, one upon the circular end piece and the other over and within the circular rim of the box or lid, whereby a smoothly covered box is formed with great rapidity.

Claim.—First, mounting the box supporter *h* in the sliding pipe sustained in the swinging frame *b*, for the purpose of allowing the box to be placed upon or removed from the supporter *h*, substantially as specified.

Second, the folding guide 4, in combination with the supporter *h*, rollers *r* and *q*, for the purpose and as specified.

Third, the roller 12, and guide or folder 8, in combination with the box supporter *h* and roller *r*, substantially as and for the purposes set forth.

No. 52,433.—JOHN W. MCDERMOTT, New York, N. Y.—*Bolt-heading Machine.*—February 6, 1866.—In this machine two wheels are placed in a stout frame revolving in opposite directions upon horizontal shafts. One wheel is provided with arms, having sockets for carrying the bolt blank, which, at the inner end, have means to eject the bolt when headed. The other wheel has dies which meet the arms having the blanks; it also has a sliding motion towards and from the other wheel. Guides are arranged to cause the dies and arms to meet at the exact point required when the heading operation is performed; after which the die wheel recedes again, and another set comes together.

Claim.—First, the combination of the jaws P', or their equivalent, with the dies D and the stop or pin D', substantially as described and for the purpose set forth.

Second, the combination of the pawl A′ and ratchet wheel *v* with the wheel T, cog-wheels B′ C′ L and K, and shaft M, and the die wheel C, substantially as described, for the purpose of giving intermittent rotary motion to the wheels C and T.

Third, the combination of the lever I′ with the cam-like projection J′ and the wheel T, for the purpose of expelling the headed bolts from the bolt holder E′, substantially as described.

Fourth, the combination of the spring R′ with the jaws P′ and the dies D, substantially as described and for the purpose set forth.

Fifth, the combination of the jaws P′, or their equivalent, with the dies D and bolt holders E′, for the purpose of centring the heads of the bolts, substantially as described.

Sixth, the combination of the sliding frame I, the die wheel C, and the crank S′, formed on the shaft B of the driving wheel A, as set forth.

No. 52,434.—ANDREW MCFARLAND, St. Johnsbury, Vt.—*Sawing Machine.*—February 6, 1866.—This invention consists of an inclined slide elevator to raise the saw beam and saw after it has made its cut, with mechanism for holding the saw up above the log while it still reciprocates and operates to move the log lengthwise to saw another cut, until the end strikes a lever and trips the spring that holds up the cross-head of the saw-bar, so that the saw falls down upon the log and commences to make another cut without having stopped its reciprocations, and all down automatically.

Claim.—The inclined elevator W, with its pin *i*, and spring X, constructed and arranged substantially as described, in combination with the saw beam E and the pin *h*, or its equivalent, on the side thereof, for the purpose herein set forth.

Also, the arrangement and combination of the catch notch *e* and stop *d*, or their equivalents, for holding up the pulley frame H, connected by means of the spring levers *a b*, or their equivalents, with the log carriage in such a manner that the log will, at the proper time, automatically release the pulley frame and allow it to descend with the saw, as herein specified.

Also, the notch V, or its equivalent, in the upper edge of the saw beam, in combination with the pin S, slotted girt L, connecting bar J, vibrating lever M, feed arm N, and ratchet wheel O, on the shaft P of the winding-up pulley, substantially as described, whereby the log carriage is drawn along by the reciprocations of the saw beam, when elevated, substantially as herein set forth.

Also, the roller *k*, inclined or tapering outward, and arranged in the frame lower than the roller *m*, substantially as and for the purpose herein set forth.

No. 52,435.—WILLIAM A. MCINTIRE, Troy, N. Y.—*Machine for Varnishing and Lining Percussion Caps.*—February 6, 1866.—This invention consists in certain mechanism arranged with suitable feeding or carrying device which will present the tinfoil, cut the lining from the same and affix it within the cap; and combined therewith is a varnishing apparatus so that caps can be varnished and lined automatically and rapidly in one and the same machine.

Claim.—First, the employment of the punch D, cutter plate E, and feed rollers F F′, all arranged and actuated by the means and in the manner substantially as herein described, in combination with a feeding device J, as herein shown, or any other equivalent device for that purpose, and operating in connection with the same for the purpose of lining percussion caps with a tinfoil or its substitute, in manner as herein set forth.

Second, in combination with a machine for lining percussion caps with tin foil or its substitute, the employment of a varnishing apparatus, the said apparatus being constructed and operating together with said lining machine, so as to automatically and consecutively varnish and line the said caps, in the manner substantially as herein described.

No. 52,436.—JAMES MCKELVEY, Buffalo, N. Y.—*Refrigerators.*—February 6, 1866.—This invention consists in so constructing the ice chambers with openings that cold air from these chambers will pass to the centre of the receiving chamber, and then be diffused throughout the same.

Claim.—First, the combination with the case A, and ice chambers C C, of the openings a' and a^2, the latter being located so as to cause the air from the ice chambers to pass first to the centre of the chamber containing the article to be kept cool, and be then diffused throughout the same, as described.

Second, the combination of the case A, ice chambers C, discharge pipes *e*, trough *d*, and wires D, the whole being constructed and arranged to operate in the manner and for the purpose herein set forth.

No. 52,437.—DUSTIN F. MELLEN, New York, N. Y.—*Grab for Oil and other Wells.*—February 6, 1866.—This invention consists of a pair of jaws connected to a shank by means of links or straps in such a way that they have a limited motion endwise from the shank when any weight is attached to them. They are also connected by a cam joint which operates when they are moving apart to close the jaws. The implement is provided with adjustable guides which enables the operator to centre and make it descend on the axial line of the well, or to cause it to descend in an inclined or diagonal position to enable it to catch any object leaning against the walls of the well.

Claim.—First, in implements for seizing and raising tubing, drills, and other articles from oil wells and other places, the use of adjustable bolts E, for guiding the implement in a vertical or in an angular direction, substantially as and for the purpose set forth.

Second, also in combination the grab A, having angular arms B B above the pivot of its jaws, the legs G G, and the cam C, on the shank of the implement, substantially as and for the purpose set forth, so that the grab is opened by means of the legs G, when the angular arms are raising between the legs G and the cam, and closed when the arms are descending.

Third, also the slotted straps F, in combination with the jaws of the grab, substantially as shown and described.

No. 52,438.—THOMAS C. MOORE, Marion, Ind.—*Eave Trough.*—February 6, 1866.—This invention consists of an eave trough with a finished cornice on one side and a guard sheet upon the other, both made of continuous metal. The claim describes and the engraving shows the form and adaptation of the same to buildings.

Claim.—The combination in an eave trough of a finished cornice A B on one side and a guard sheet D on the other, when both are made of continuous metal, and the guard sheet is placed upon the sheeting of the roof, its upper edge covered by the shingles or tiles, and the cornice side is secured substantially as described, for the purpose of having an ornamental eave trough.

No. 52,439.—CHARLES B. MOREHOUSE, Newcastle, Ind.—*Whip Socket.*—February 6, 1866.—This invention consists in the construction of the ring and clamp with the screw penetrating the ring from the outside, in combination with a round metallic bottom and elastic top.

Claim.—The screw penetrating the ring from the outside, and the construction of the rings and their clamps, in combination with their metal bottom and elastic top, as herein described and for the purposes set forth.

No. 52,440.—FRANCIS B. MORSE, Milwaukee, Wis.—*Carriage Clip.*—February 6, 1866.—This invention consists in forming the clip with a chamber, in which is placed an anti-rattler, one end of which presses against the connecting bolt, and which is held up to its work; and the wear of the parts counteracted by a rubber spring carefully protected from the weather.

Claim.—First, a carriage clip constructed substantially as described and for the purpose set forth.

Second, the combination of the anti-rattler J, with the bolt H, and with the clip, substantially as described and for the purpose set forth.

No. 52,441.—WILLIAM H. NICHOLS, Chatham, Conn.—*Washing Machine and Wringer.*—February 6, 1866.—This invention consists in the employment of two corrugated or roughened surface rollers in combination with four cog wheels of different diameters, two of which are mounted on the axles of the rollers, and two in studs secured in an adjustable lever, so that when the lever is made to close up towards the rollers the latter will be geared together by the intermediate cog wheels mounted on the lever; one roller is made to revolve much faster than the other, thereby producing a rubbing as well as a squeezing action upon the clothes passing between them.

Claim.—The rollers C C′, provided with cog wheels *b b′*, on their axles, on combination with an adjustable lever F, which is provided with the cog wheels *c c′*, intended to operate in connection with the cog wheels *b b′*, substantially in the manner and for the purpose set forth.

No. 52,442.—CHARLES A. PALMER, Newburg, N. Y.—*Blind Fastening.*—February 6, 1866.—This invention consists of a catch hung by one end to a hollow socket plate inserted within the lower rail of the blind; the outer end of the catch is made double hook shaped; within the window sill, and below its face, is a metallic plate; to the inner edge of this plate another plate is hinged, which plate, when closed down upon the lower plate, is flush with the surface of the sill; a notch is made in the contact surface of each of the plates of proper shape to receive the hook-shaped end of the catch.

Claim.—The combination with the hook-fastening catch *a* of a window blind, of the holding plates *f* and *h*, or their equivalents, inserted within the window sill, under the sash frame, and arranged and operating substantially in the manner described and for the purpose specified.

No. 52,443.—HENRY L. PARKER, Hartford, Conn.—*Brad-awl Handle.*—February 6, 1866.—This invention consists of a brad-awl handle, the shank having a socket formed in the end to receive the shank end of the awl; a slit is cut across the shank into the socket in which is fitted a latch operated by a spring.

Claim.—Forming a slit *i*, across the shank *a′*, in combination with the latch *n*, and handle *a*, substantially as and for the purpose described.

No. 52,444.—WILLIAM PIRSSON, Newark, N. J.—*Ratchet Wrench.*—February 6, 1866.—This invention consists in the mode of securing the ratchet socket in the stock or handle

of the wrench, whereby great facility is afforded for its removal when it is desirable to change one for another.

Claim.—First, in combination with the ratchet and pawl arranged in a cavity in one side of the stock, the lip on the pawl. substantially as and for the purpose herein specified.

Second, the stop *a*, in the ratchet socket, substantially as and for the purpose herein specified.

No. 52,445.—JOHN B. PITTS, Salem, Ind.—*Seeding Machine.*—February 6, 1866.—This invention consists in the combination and arrangement of different parts of the machine, whereby the operator is enabled to drop different quantities of seed at various times. A gang of teeth are arranged in the rear of a large driving roller in such a manner that after the seed are dropped, the roller will press them into the ground, and break up the clods of earth previously to covering the seed, by the teeth.

Claim.—First, the arrangement and combination of the hopper D, rotating seed-dropper cylinder C, supporting and driving drum B, and the gang of ploughs, the latter being applied to the frame A, in rear of the roller B, and the whole operating substantially as described.

Second, combining with the cylinder C, having seed cups of different sizes, the perforated slide *b*, pitman *d*, lever *c*, and the gauge plate *h*, substantially as described.

No. 52,446.—KEARAN REED, New York, N. Y.—*Pump.*—February 6, 1866.—Underneath the ordinary chamber of a pump is a receiving channel and nozzle, and upon the bottom of the same are placed seats for the pump cylinders. The pump cover forms, also, a support for the beam and an air chamber which extends down between the cylinders. The cover forms a tight joint on the pump chest, and is secured by means of set screws or bolts, by simply loosing which the interior of the pump may be exposed for cleaning or repairs.

Claim.—A new article of manufacture, consisting of a pump, comprising the water chamber A A, as shown, the two-pump cylinders K K, secured and arranged within said chamber, as shown, and the air chamber H, made, arranged, and secured over said water chamber and said pump cylinders, as shown and described.

No. 52,447.—ALFRED RIX, San Francisco, Cal.—*Forging Apparatus.*—February 6, 1866.—This apparatus consists of an armature revolved by a crank which carries two hammers whose handles, hinged respectively upon axes at the ends of the armature, may fold back upon the armature and upon opposite sides thereof in such manner that the hammers will rest upon supports attached to said armature lying within or nearly within the plane projected of the axis to which the handles are secured, and the axis of revolution of the armature. A rim or guard of unequal but proper curvature, which lies in the plane projected of revolution of the armature, prevents the hammer from being thrown from its support by centrifugal force until it shall have passed beyond a plane projected vertically through the axis of the armature.

Claim.—First, connecting the handle of the hammer to the arm, or its equivalent, and so adjusting the length of said handle, and arranging the several parts, that the hammer when retracted shall rest upon a support fixed upon the opposite end or intermediate portion of the arm, or its equivalent, which lies within or nearly within the plane projected, of the axis of movement of the hammer, and the axis of rotation of the arm, substantially as described.

Second, the guide D, constructed and used, substantially in the manner and for the purpose specified.

No. 52,448.—JOHN K. ROBINSON and DAVID A. STRONG, Washington, D. C.—*Packing for Deep Wells.*—February 6, 1866.—In this invention the upper and outer tube is slotted on its sides to move upon headed pins set in the inner tube. A hollow cone embraces the joint and is secured to the lower pipe. When the upper pipe descends to its place an elastic tube secured to it passes over the cone and expands, thus securing the joint in the pipes and closing up the well exterior to the pipes.

Claim.—First, the tubes B and E, forming a telescopic joint in combination with the flexible packing G, substantially as described.

Second, in combination with a telescopic joint, the conical enlargement A, slots F, and screws or pins D, substantially as described.

Third, the cone A, and flexible packing G, arranged and operating substantially as described, forming a packing for both the well and for the tube.

No. 52,449.—H. W. RUSSELL, Stoughton, Mass.—*Meat and Vegetable Chopping Machine.*—February 6, 1866.—This invention consists in a vertically reciprocating knife which works through the cover of a vessel which has a rotary motion in a horizontal plane. The same power which drives the knife gives rotary motion to the vessel which contains the meat or vegetables.

Claim.—The arrangement of the gear-wheel R, shaft D, crank E, pitman F, reciprocating knife I, in combination with the pinion N, shaft S, rotating plate L, and vessel K, operated from the same driving wheel P, in the manner as herein described.

No. 52,450.—JOHN RUSSELL, Sing Sing, N. Y.—*Process for Hardening Files.*—February 6, 1866.—This invention is described by the claim.

Claim.—Passing a galvanic current through or into the solution in which files or other articles of steel are to be hardened, substantially as and for the purpose described.

No. 52,451.—EDVARDT SAVORAL, New York, N. Y.—*Steam Engines.*—February 6, 1866.—This invention relates to an oscillating toy steam engine, and consists in making the engine frame and support for the crank shaft in a single piece. This supports the steam cylinder, contains the steam passage, makes the connection with the boiler, and all is combined with a toy boat. The cylinder is held in position by a spiral spring and nut, and is supported by only one trunnion.

Claim.—First, the frame A, constructed with a hollow column *f*, for supporting the cylinder, and attached to the boiler and the hull of the vessel, substantially as herein specified.

Second, the combination and arrangement of the supporting column, the single cylinder trunnion, the valve disks *g* and *p*, spring *r*, and nut *s*, substantially as and for the purpose herein set forth.

No. 52,452.—JOHN C. SCHAEFER, Philadelphia, Penn.—*Steam Gauge Cock.*—February 6, 1866.—To the conical packing valve is attached a square shank, and the cap below the valve seat is enlarged and has a screw cut in the opening, into which the screw stem of the try valve is screwed; the said square shank fits in a corresponding socket in the stem, so that when a rotating movement is given to the shank the screw stem is also caused to rotate and moves up or down, and the try cock is opened or closed accordingly.

Claim.—The packing valve C, the shank *l*, and the socket *o*, in the stem *n*, substantially as herein specified and described.

No. 52,453.—G. W. SCHRAMM, New York, N. Y.—*Ruler.*—February 6, 1866.—This invention is fully explained by the claim.

Claim.—A ruler formed by the union of two substances, one flexible and elastic, and the other flexible, or one more flexible and elastic than the other, such as the substances well known as hard and soft vulcanized India-rubber, substantially as and for the purpose specified.

No. 52,454.—JOHN F. SCHUFFENECKER, St. Louis, Mo.—*Lubricating Vertical Shafts.*—February 6, 1866.—In this invention an oil cup is arranged at the upper end of the shaft and covered by a cap; a cock beneath it serving to regulate the flow downward through a tube in the centre of the shaft to the step beneath, which also is protected from extraneous matters, and has a minute hole permitting the escape of the oil. The step is adjustable by means of a wedged key to make allowance for wear.

Claim.—First, an upright, permanent toe *l*, nuts *m m*, key *p*, and the pan *k*, with the oil hole or slot *r*, and cup *j*, as shown and for the purpose herein described.

Second, oiling the pan and toe from above by the lubricator A, tube *i*, with the vent hole *d*, shutter *c*, secured by the screw *a* and nut *b*, or its equivalent.

No. 52,455.—THOMAS SHAW, Philadelphia, Penn.—*Connecting Rod Joint.*—February 6, 1866.—This invention is designed for all vibrating rods, and is adapted to the employment of gas pipes for rods, and consists in constructing the connecting joint independently of the rods, whereby utility and strength are combined.

Claim.—Constructing connecting rod joints in the manner described.

No. 52,456.—GEORGE B. SIMPSON, Washington, D. C.—*Amalgamating Gold and Silver.*—February 6, 1866.—This invention consists in a revolving air-tight cylinder provided with an interior wire coil or paddle wheel, so that when the cylinder is rotated the pulverized ore will fall upon the wheel breaking and diffusing the masses, and subjecting every particle to contact and amalgamation with the liquid metal.

Claim.—First, the rotating closed vessel A, in combination with the interior coil C, or its equivalent.

Second, the vessel A, with removable end E, and interior coil C.

Third, the closed vessel A, in combination with suitable devices for lifting the same to and from the fire, substantially as described.

Fourth, the amalgamation of gold and other precious metals, by immersing finely pulverized ore in heated mercury by means of a rotating vessel and internal agitator or stirrer, substantially as described.

No. 52,457.—GEORGE B. SNOW and THEODORE G. LEWIS, Buffalo, N. Y.—*Gas-jet Cigar Lighter.*—February 6, 1866; antedated January 22, 1866.—This invention consists of a gas cigar lighter freely suspended, the jet and flame of which is controlled by gravitation so as to be small when the device hangs at ease, and to increase whenever the handle is seized for use.

Claim.—First, the arrangement and combination of the inclined valve chamber with the gravitating valve, when operating in the manner and for the purposes set forth.

Second, the adjusting screw *e*, arranged and operating in the manner and for the purposes substantially as described.

Third, the opening and closing hood or shield G, operating in the manner and for the purposes substantially as described.

No. 52,458.—Thomas Stewart, Pittsburg, Penn.—*Horse Rake.*—February 6, 1866.—This invention consists in the use of two sliding rods, operated by a lever so that their outer ends will engage with teeth upon the wheels; said rods being attached both to the axle and supporting frame of the rake, so that the forward movement of the wheels will tilt the rake. The rake is also provided with sloping clearers which are attached to the vibrating frame which supports the teeth.

Claim.—First, the sliding rods Q Q′, one or both, provided with lips *d d′*, at their outer ends, and connected at their inner ends to a lever R, and also connected to the hinged frame H, to which the rake teeth J are attached, and all arranged to operate substantially as and for the purpose set forth.

Second, the combination of the rake teeth J, with the hinged frame H, and fingers F, all arranged to operate substantially as and for the purpose herein specified.

No. 52,459.—Henry B. Stiles, New Haven, Conn.—*Water Motor.*—February 6, 1866.—This invention consists in the peculiar arrangement of two or more valves within a cylinder, combined with cams which operate to gradually open the said valves to receive the water.

Claim.—The combination of two or more valves L, with their cams N, when constructed and arranged to operate within a cylinder, substantially as and for the purpose specified.

No. 52,460.—Wm. W. St. John, St. Louis, Mo —*Stove-pipe Damper.*—February 6, 1866.—The damper is composed of three plates, arranged at the centre and the sides; the centre is a little higher than the sides, and is parallel with a corresponding piece on the lower side, which, in turn, is a little lower than the side pieces, so that an air passage is formed between the centre pieces. These pieces are fastened to curved end pieces; in the chamber, actuated by a handle, is a slide of the same width and depth, for the purpose of clearing away soot, &c.; the side pieces are composed of segments fastened to the end pieces, and fitting between the centre pieces with a space between their edges.

Claim.—First, the combination of the segmental plates A A, with the end pieces B B, the plates C C, and the scraper D, as and for the purpose set forth.

Second, the scraper D, for the purpose of removing the accumulated soot from a stovepipe damper.

No. 52,461.—George W. Stoeckel, Pittsburg, Penn.—*Graduated Bottle.*—February 6, 1866.—This invention consists in making the marks on the surface of the glass during the operation of moulding the bottle.

Claim.—A moulded or pressed graduated bottle made substantially as herein described.

No. 52,462.—Joseph S. Stukey, Sugar Grove, Ohio.—*Corn Cultivator.*—February 6, 1866.—This invention consists in the construction of a double shovel made adjustable at the carriage axle, in combination with a cross-bar and foot lever; by means of which a vertical motion may be given to the ploughs.

Claim.—The combination and arrangement of the ploughs or cultivators, cross-bar, axle, and frame, when made adjustable, as and for the purposes set forth.

No. 52,463.—James Suggett, Cortland, N. Y.—*Mode of Sinking Wells.*—February 6, 1866.—This invention consists in protecting the pump tube, while being driven into the earth, by means of an armor cap, having a shoulder on the lower end, fitting on the tube, and retained by a screw thimble.

Claim.—First, the armor cap *c*, with shoulder H, and thimble *d*, for the purpose described.

Second, in combination with cap *c*, thimble *d*, and shoulder H, the pump tube *a*, for the purpose of driving said tube directly into the earth, substantially as set forth.

No. 52,464.—B. F. Taber, Buffalo, N. Y.—*Process for Preparing and Tanning Hides.*—February 6, 1866.—This invention consists in first subjecting the hides to the action of weak lime water until the pores become distended; they are then put into a strong solution of lime and allowed to remain a sufficient length of time, after which they are subjected to the action of heated water, and are then vatted in a mixture of fowl's dung and hot water.

Claim.—First, in the process of preparing hides the use of aqua calcis, or a solution of lime in water, as a soak for hides preparatory to liming or sweating, or both.

Second, the use of heated water for sweating hides either in connection with or without liming, or in connection with the use of aqua calcis.

Third, the use of heated water administered to hides while in motion in a drum or cylinder, for the purpose of removing the hair, cleansing them from lime, &c.

Fourth, baiting (or abating) the lime from hides by the use of warm water and fowl dung, or other articles used as a bait, administered to them while in motion in a drum or cylinder.

Fifth, the use of aqua calcis, (or a solution of lime in water,) as a soak for hides, after they have been otherwise prepared for the tan.

No. 52,465.—T. Chalkley Taylor, Philadelphia, Penn.—*Putting up Caustic Alkalis.*—February 6, 1866; antedated January 26, 1866.—This invention is described by the claim.

Claim.—The putting up of caustic soda or potassa in cases which are originally left open at both ends and afterward closed by cement, substantially in the manner above-described.

No. 52,466.—T. Chalkley Taylor, Philadelphia, Penn.—*Putting Up and Preserving Caustic Potassa and Soda.*—February 6, 1866; antedated January 26, 1866.—This invention consists in the method of filling tin cases with caustic alkali in a molten state, so that the solder which holds the case together will not be melted. The tin cases are made in the ordinary manner, the top being left open; the molten alkali is poured in so as to just cover the bottom, and allowed to cool. The alkali which covers the bottom will protect the solder when the case is being filled up. By pouring in the alkali in small quantities, and allowing it to cool at each operation, the solder on the sides of the case may be prevented from melting.

Claim.—The above-described method of filling a case with caustic soda or potassa, in such a manner as to avoid the danger of melting the solder which holds the case together and thus securing the box from injury.

No. 52,467.—Daniel E. Teal, Norwich, N. Y.—*Churn.*—February 6, 1866.—This invention consists in forcing the cream around through different departments, through screens, by which the necessary friction is acquired, and the air which has imparted its butter-making qualities to the cream is liberated and a new supply of fresh air substituted.

Claim.—The arrangement by which the milk or cream is made to perform a circuit through different departments and through screens, as described, by which all parts of the milk or cream are agitated and subjected to the necessary amount of friction, and brought into contact with the atmosphere at each circuit of the milk or cream; the cream keeping the butter first formed from passing through the churn unnecessarily.

No. 52,468.—Kathrin Thorman, Cleveland, Ohio.—*Canteen and Lunch Box.*—February 6, 1866.—This invention consists of a canteen having a recess and cover in which a lunch may be placed.

Claim.—The arrangement of the chamber D, with its cover and the recess or depression A′, in combination with the heater or case A and screw C, constructed as and for the purposes set forth.

No. 52,469.—George E. Thompson, New Haven, Conn.—*Door Fastener.*—February 6, 1866.—This invention consists in having three plates pivoted together, two of them turning on a pivot. The said plates are notched near their upper ends; on the outside of one of the plates is a stud to which is hinged a bar which turns on its hinge, so that it may either stand across the back of the plates or transversely with the notches of the plates.

Claim.—The combination of the notched plates A B and C with the vibrating bar D, all constructed and arranged substantially in the manner and for the purpose set forth.

No. 52,470.—S. D. Tripp, Lynn, Mass.—*Heel-polishing Machine.*—February 6, 1866.—This invention consists in having the studs, which enter the last, arranged in such a manner that they, with the last, may rise and fall, and thereby compensate for the oblique attachment of the last to the rotating arm of the device.

Claim.—The attaching of the stud *i* which enters the hole or holes in the last A* to a sleeve *g* connected to a pendent or swinging plate G, all arranged in such a manner as to admit of the last, and consequently the heel of the boot or shoe, rising and falling to admit of the proper adjustment of the heel to the polishing wheel and guard or rest, substantially as herein shown and described.

Also, the springs *e e* attached to the shaft F, in combination with the pendent or swinging plate G, substantially as and for the purpose specified.

Also, the combination of the shaft F, pendent or swinging plate G, sleeve *g*, studs *i i′*, polishing wheel D, and guard or rest E, substantially as and for the purpose set forth.

No. 52,471.—A. J. Van Boekel, Uniontown, N. J.—*Corn Planter.*—February 6, 1866.—This invention consists in the combination and arrangement with the ordinary plough of a corn-dropping mechanism, and an additional mouldboard and share in front of the plough; the said mouldboard and share having their faces opposite to each other, so that the front or additional share opens, and the rear share and mouldboard covers the furrow.

Claim.—The attachment to and combination with a common plough of an additional ploughshare and mouldboard in front of the ploughshare and mouldboard of the plough, as commonly used, and an intervening corn-dropping mechanism, the mouldboards being reversed or faced towards each other, and their line of travel being such that the wings of the mouldboards are nearly in line with each other, so that the furrow turned by the front or attached share and mouldboard is immediately turned back by the ploughshare and mouldboard, thereby covering the corn dropped behind the furrow opener, the whole constructed and arranged substantially as hereinbefore described.

No. 52,472.—T. J. Wells, New York, N. Y.—*Peat Machine.*—February 6, 1866.—This invention consists of an apparatus provided with a hopper for receiving the peat, the said hopper being provided with a set of revolving cutting knives. At the lower part of the hopper are two crushing rollers which are made to revolve at different rates of speed; the peat passes between these rollers and then enters the moulding boxes on the cylinders, after which it passes on to an endless band which carries it to the drying ground.

Claim.—First, mashing and grinding peat and breaking up its air and water cells between smooth cylinders whose peripheries move at different velocities, substantially as described.

Second, the cylinders H H′ whose peripheries are made to move at different velocities in combination with a series of fixed or revolving knives, or both, for breaking up crude peat before it is delivered to the action of said cylinders, substantially as described and shown.

Third, the cylinders H H′ whose peripheries move at different velocities in combination with a series of fixed or revolving knives, or both, and with an elevating apparatus for delivering crude peat to the action of the knives and of the cylinders, substantially as shown.

Fourth, cylinders H H′ constructed and operating substantially as described, in combination with the moulding cylinders E E, substantially as above described.

Fifth, in combination the cylinder G armed with knives or arms, as described, the hopper D above it, and the cylinders H H′, substantially as described.

Sixth, mixing coal dust or other fire-concentrated combustible material with crude peat while its lumps are being broken up by means of a hopper D for containing such coal dust or other material, and of a system of revolving knives or arms below the hopper, substantially as described.

No. 52,473.—J. A. Welsh, Xenia, Ohio.—*Blind Splint Machine.*—February 6, 1866.—This invention consists in having the knife held by a wedge in the stock; just above the cutting edge of the knife is a guide roller made adjustable by means of a screw, and flexible by means of a rubber spring operating with such a roller, which guides the splint when cut through the groove in the tool.

Claim.—First, the sliding block E provided with the roller *c*, arranged and operating as shown and described.

Second, the spring *a* and set screw *b* in combination with the movable block E and roller *c*, arranged and operating in the manner and for the purpose set forth.

No. 52,474.—Norman W. Wheeler, Brooklyn, N. Y.—*Steam Engine.*—February 6, 1866.—This invention consists in combining two vertical cylinders with an entablature resting upon them as upon columns, by which means the cylinders and entablature constitute the principal frame of the engine and give access to the cylinder heads through apertures in the entablature. The main crank is located in the centre of the entablature, and both pistons are connected to the same crank.

Claim.—The combination of two vertical or nearly vertical working cylinders *a a* with a connecting entablature *c c* in such manner that the cylinders and entablature will constitute the principal frame of the engine, when so arranged that the upper cylinder heads *d d* will pass into their places through the entablature, substantially as and for the purposes described.

No. 52,475.—Norman W. Wheeler, Brooklyn, N. Y.—*Valve Gear for Steam Engines.*—February 6, 1866.—This invention consists of an eccentric so constructed and combined with the main shaft that it may be shifted over in a right line from the position proper for running the engine in one direction to the position proper for running it the other way, or to any intermediate position without changing the lead of the valve.

Claim.—The combination of the eccentric *b*, cheek pieces *c c*, pin *d d*, and clutch *g*, or their mechanical equivalents, constructed and combined with the main shaft and together, substantially as and for the purpose described.

No. 52,476.—Norman W. Wheeler, Brooklyn, N. Y.—*Still for Distilling Salt Water.*—February 6, 1866; antedated December 26, 1865.—This invention consists of an apparatus to be used on vessels at sea for distilling salt water. The upright vessel is so placed in a ship that its bottom may be below the surface of the water in which the ship floats; the said vessel is surrounded by a steam jacket, to the lower end of which is connected a liquid trap. The interior of the vessel communicates with the water in which the ship floats, by means of tubes. A pipe is attached to the upper part of the vessel and is provided with a valve to prevent the vapors from returning to the said vessel; a tube connects this pipe with the liquid trap.

Claim.—First, the combination of the vessel *a*, steam jacket *b b*, trap *g*, and sea cock *v*, or their equivalents, substantially as described.

Second, the combination of the valve *n*, vessel *a*, jacket *b b*, and sea cock *v*, or their equivalents, substantially as described.

Third, the combination of the cooling jacket *r* or its equivalent upon the feed-pipe *q q*, in combination with an automatic still, substantially as described.

No. 52,477.—Norman W. Wheeler, Brooklyn, N. Y.—*Method of Relieving Liquids of Gases.*—February 6, 1866; antedated December 26, 1865.—This invention consists in combining a liquid trap with the discharge pipe of a force pump or vessel containing liquid and gas. A hot well receives water from a surface condenser by means of the suction pipe of a force pump. The trap is composed of a cylindrical pot open at the top and attached to a guide that slides on a tube. The guide consists of a tube enlarged at its lower end and perforated. The lower end of the tube is faced off and made smooth, so as to fit tightly against the bottom of the floating pot.

Claim.—Relieving liquids of free gases or air while they are under pressure, by means of the liquid trap *f* or its equivalent, when the trap *f* is combined with the pump *c*, substantially as and for the purposes described.

No. 52,478.—DANIEL D. WHITKER, Hudson, N. Y.—*Saw Rebate Plane.*—February 6, 1866.—This invention consists in applying to an adjustable saw an adjustable fence, whereby the saw may be gauged to work grooves, especially adapted for inserting rubber weather strips.

Claim.—Combining and arranging the adjustable saw A with the adjustable gauge rest C, substantially in the manner and for the purpose herein set forth.

No. 52,479.—WILLIAM WICKERSHAM, Boston, Mass.—*Nail Machine.*—February 6, 1866.—This invention consists in the arrangement of a series of recesses in the cutter stocks for receiving the cutters in the said stocks, in the arrangement of detachable clamps for securing the cutters in said recesses, and also in the employment of pincers or clamps in combination with a shifting frame for holding the sheet and vibrating it from side to side, which has also a feed motion for presenting it to the cutters.

Claim.—First, placing some of the cutters a little in advance of the others, in the direction of their cutting movement, so that some of the nails shall be cut a little before the others for the purpose of relieving the strain upon the machine, substantially as described.

Second, the series of recesses in the cutter stock formed substantially as shown, to determine the position of the cutters in the stock, or the employment of equivalent means to accomplish the same purpose, substantially as described.

Third, the method herein described of confining the cutters in the stock.

Fourth, the employment, in combination with the shifting frame and carriage, of pincers or clamps, for the purpose of holding the sheet and presenting it to the cutters, substantially as described.

Fifth, the employment, in combination with the sliding frame K of the stops L^2 L^2, or their equivalent device, for arresting the movement of the frame at the same fixed point in either direction, substantially as described.

Sixth, the employment, in combination with the frame K and carriage L, or their equivalents, of the fixed and yielding guides S and S′, or their equivalents, to guide the sheet of metal laterally as it is moved forward, substantially as described.

No. 52,480.—CHARLES WILHELM, Philadelphia, Penn.—*Lamp.*—February 6, 1866.—This invention consists of a spring fastened to the body of the lamp, in combination with a notched ring for pins to catch into.

Claim.—The spring E when fastened to the body of the lamp and arranged in combination with the notched ring B, substantially in the manner and for the purpose described.

No. 52,481.—ELISHA WILSON, New Haven, Conn.—*Sounding Telegraphs.*—February 6, 1866.—This invention consists in controlling the sounding of air or vapor-sounding instruments for electro-telegraphy without stoppage of the flowing vapor. Signals may be obtained from continuous sound by the transition from one pitch, tone, or pulsation to another.

Claim.—First, controlling either continuous or intermittent air, gas, or vapor sounding for telegraphic purposes, without stopping the flow of air, gas, or vapor, by which the sound is produced.

Second, a pallet or tongue *v* or *v′*, or any substantially equivalent device adapted to intercept, regulate, or control the vibrations of air, gas, or vapor, against the edge of the lip *u* in order to vary or suppress the sound, substantially as explained.

Third, the employment of "continuous sound" from air, gas, or vapor sounding instruanother, ments for telegraphic signals, by transition from one tone or pitch, key or pulsation, to either at the main or at any secondary sounding orifice, substantially as above set forth.

No. 52,482.—JOHN I. WILSON, Abingdon, Ill.—*Furrowing machine.*—February 6, 1866.—This invention consists in providing an axle with three wheels placed at equal distances apart, the axle having a draught pole connected to it. and a proper framing formed to support a driver's seat whereby three furrows may be made simultaneously.

Claim.—A furrowing or marking device composed of a plurality of wheels placed on an axle and arranged with a draught pole and driver's seat, substantially as herein shown and described.

No. 52,483.—WILLIAM C. WRIGHT, Trenton, N. J.—*Bending Wood.*—February 6, 1866.—The object of this invention is to bend bows for wagon covers, and it consists of a form of the shape the bows are to be when bent, which is effected by placing the pieces of wood over the form and passing over them a flexible bending strap, when it is brought to its position and held by clamps.

Claim.—The arrangement of the flexible plate *b*, clamps *c c*, bolts *d d*, and rivets *f f*, with the forming frame *a*, as and for the purpose explained.

No 52,484.—Linus Yale, Jr., Shelburne Falls, Mass.—*Safe.*—February 6, 1866; antedated December 9, 1865.—Instead of casting the plates flat so as to form joints at the corners, the corner pieces are cast in the shape of three sides of a hollow cube, the sides being about one-third the width of the sides of the wrought-iron box or safe to which they are to be applied, and the filling pieces, or those pieces which are intended to cover the surface of the wrought metal between the corner pieces, are cast in the form of two sides of a hollow cube.

Claim.—The angular plates or sections of hard metal, consisting of corner pieces, or corner pieces, and edge or filling when constructed, arranged, and applied to the exterior of the inner wrought-iron portion of the walls of a safe, substantially in the manner and for the purposes hereinbefore described.

No. 52,485.—Levi Beemer, Libertyville, N. J., assignor to himself and J. H Williamson, Branchville, N. J.—*Pump.*—February 6, 1866.—This invention consists of a pump in which the suction, or lift, and the force pump are combined, and by which almost all of the water in a well or reservoir may be drawn. It is designed for what is commonly termed a submerged pump, the cylinders being placed near the bottom of the well or reservoir.

Claim.—The combination of the two pump cylinders B B′, with the pistons F E and valves, and the yoke G, arranged to operate substantially in the manner as and for the purposes set forth.

No. 52,486.—John W. Campbell, New York, N. Y., assignor to himself and Walter Joralemon, Newark, N. J.—*Coal-ashes Sifter*—February 6, 1866.—The sifter is made in two parts; the ash receptacle and sifter proper may be placed in one compartment of this apparatus, and coal in the other. Upon the top are parallel rails, on which the sifter may be passed back and forth by means of rollers on its bottom. The device can be so arranged with a stuffed cover as to be used as an ottoman.

Claim.—Constructing and combining the sieve and ash-box, substantially in the manner and for the purpose herein above set forth, as an article of manufacture.

No. 52,487.—John C. Connor, Williamsburg, N. Y., assignor to T. J. Hennessy, New York, N. Y.—*Wrench.*—February 6, 1866.—This invention relates to that class of wrenches in which a stationary and a movable jaw are used, and it consists in such a construction and arrangement of such jaws with regard to each other whereby the efficiency and convenience of the wrench is increased.

Claim.—The stationary jaw A with its fixed longitudinal slotted tube C, in combination with the screw shaft F, screwing into the movable jaw L, and encased within and by the said tube, with its handle I, said jaw L moving in and being guided by the said slotted tube, substantially as herein described and for the purpose specified.

No. 52,488.—Isaac M. Dann, New Haven, Conn., assignor to the New Haven Folding Chair Company.—*Folding Chair.*—February 6, 1866.—This invention consists only in bowing or arching the back round of a folding, cross-legged chair, to which the seat is attached, and the manner of securing it to the front legs.

Claim.—The use in a folding chair of the character herein described of a curved or bowed back round for the seat, whether the same be placed between or in rear of the front legs of the chair, as and for the purposes set forth.

No. 52,489—Cyprien Faure, assignor to himself and C. Francis Bates, New York, N. Y.—*Machine for Felting Hat Bodies.*—February 6, 1866.—By this invention the hat bodies are rolled within an apron wound about rollers, all being partially immersed in a tank, whose slotted bottom forms the planking table. The slotted planking board resting on the rolls is caused to reciprocate to and fro; steam and hot water pipes supplying the tank with the required heat and moisture.

Claim.—The box A with the longitudinally slotted table A′, in combination with the longitudinally slotted plank B, and with a suitable roller or rollers, the whole constructed and operating substantially as and for the purpose described.

No. 52,490.—Halvor Halvorson, North Cambridge, Mass., assignor to himself and William T. Eustis, assignors to themselves and Levi Cushing, Jr.—*Method of Treating Gold Ores.*—February 6, 1866.—In this invention the ore is first crushed and with suitable alkali is subjected to a gradually increasing temperature until bright red, and then exposed on iron or stone plates to atmospheric influences.

Claim.—The treatment of gold and silver bearing pyritous ores in the manner and for the purposes herein described.

No. 52,491.—John Hankey, assignor to himself and Henry Muller, North Cambridge, Mass.—*Curriers' Scourer*—February 6, 1866.—This device consists of a metallic socket piece combined with the handle and the stone, said handle being provided with adjusting screws and recesses for the reception of their heads.

Claim.—The improved curriers' scourer as made with the metallic socket piece combined and arranged with the handle and the stone, and with the handle provided with the adjusting screws and the recesses for reception of their heads, substantially as described.

No. 51,492.—JAMES HOLLINGSWORTH, assignor to C. M. HENDERSON, Chicago, Ill.—*Sash Locks.*—February 6, 1866.—This invention consists in constructing sash locks in such manner that the parts of which they are composed can be cheaply made and put together, and so that said parts may be secured together and the lock rigidly fixed to the sash by a single fastening.

Claim.—First, the application of the jaws B B′ to a plate A having a projecting rim *a*, for the purpose of forming a space between the surface of said plate and the jaws to receive the pins *h h* and spring *g*, substantially as described.

Second, the stud *b* in combination with the cup-shaped plate A and jaws B B′, substantially as described.

No. 52,493.—ORRIN L. HOPSON and ELI J. MANVILLE, Waterbury, and HEMAN P. BROOKS, Walcottville, Conn., assignors to ORRIN L. HOPSON, Waterbury, and HEMAN P. BROOKS, Walcottville, Conn.—*Machine for Reducing or Pointing Wires.*—February 6, 1866.—In this machine two dies are fitted at the extremity of a revolving arbor, one of which being hinged to the other is free to open and close, and is so opened and closed several times during each revolution by being brought in contact successively with a number of toggle levers arranged in a circle within a stationary head stock.

Claim.—First, a series of toggle blocks *k*, mounted substantially as specified, in combination with the die *i*, shaft *b*, and jaw *c*, substantially as and for the purposes set forth.

Second, the combination of the blocks *m* and screws *l* with the toggle blocks *k* and die *i i*, as and for the purposes specified.

Third, the spring *n* fitted as specified in combination with the toggle blocks *k* and die *i*, as specified.

Fourth, the jaw *d* on the centre *e*, carrying half the divided die *i* at one end, in combination with the adjusting screw *i*, applied to the opposite end of the jaw *d*, as and for the purposes specified.

Fifth, the cylinder or pin *o*, in combination with the jaw *d* and toggle or cam blocks *k*, for the purposes and as specified.

No. 52,494.—LANCELOT KIRKUP, Brooklyn, N. Y., assignor by mesne assignment to THE BOLT, RIVET, AND SPIKE COMPANY, New York, N. Y.—*Bolt-heading Machine.*—February 6, 1866.—This invention consists in the arrangement of two horizontal die-carrying disks, one upon each end of the machine, with a reciprocating plunger, operating alternately upon each disk, worked by an eccentric within a yoke in the middle of said plunger, in combination with water troughs through which the disks carry the dies to keep them cool.

Claim.—First, the arrangement of two die-carrying disks A, one on either end of the frame B, in combination with suitable punchers H, with a yoke I, and eccentric *n*, or their equivalents, constructed and operating substantially as and for the purpose specified.

Second, the troughs L, in combination with the die-carrying disks A, arranged substantially as and for the purpose specified.

No. 52,495.—MARQUIS D. MOORE, Brooklyn, N. Y., assignor to himself and SAMUEL BROMBURG, same place.—*Hay and Cotton Press.*—February 6, 1866.—This invention consists in constructing a press with a double follower or plateau, and with toggle levers and windlasses, so that power is gained as resistance increases.

Claim.—The toggle levers, constructed as herein described, and conical windlasses in combination with the two inclined extensions or end pieces *c c*, as and for the purposes herein specified.

No. 52,496.—DAVID MYERS, assignor to himself and WILLIAM H. KRETSINGER, Chicago, Ill.—*Rotary Plough.*—February 6, 1866.—This invention consists in arranging a series of rings upon or around the cylinder to which the ploughs or shovels are attached, said rings lying between consecutive series of ploughs or shovels, and being entirely independent of said roller or cylinder, act in such a manner as to thoroughly clean off all the earth or soil which would otherwise adhere to the shovels.

Claim.—The employment of a series of rings in combination with the revolving cylinder F, and shovels *a*, arranged and operating substantially as and for the purposes herein shown and described.

No. 52,497.—NOAH C. PERRY and GEORGE S. GLADDING, Chester, Conn., assignors to JEREMY W. BLISS, Hartford, Conn.—*Door Guard.*—February 6, 1866.—This invention consists of a stop inserted in the base board or other suitable place; the said stop being hollow, contains within it a spiral spring. A movable stud is inserted in this spring, with a cushion upon its outer end, where the door comes in contact with it, so that when the door is swung open, and comes in contact therewith, the spring relieves the force of the concussion.

Claim.—As a new and useful article of manufacture a door guard, substantially in the manner as and for the purpose described.

No. 52,498.—JAMES M. THOMPSON, Stoneham, Mass., and S. D. TRIPP, Lynn, Mass., assignor to S. D. TRIPP.—*Heel-polishing Machine.*—February 6, 1866.—This invention

consists of a loose disk, placed at one end of the polishing shaft, in connection with a gauge; in connection with the above shaft is a bar suspended by a spring from an upright, and provided with a rotating disk, in which a sliding plate is fitted, having the boot or shoe attached.

Claim.—First, the loose disk D, placed at one end of the rotating polishing shaft C, in connection with the gauge E, substantially as and for the purpose specified.

Second, in connection with the polishing shaft C, the frame or bar G, suspended by a spring H from an upright A, or other fixture, and provided with a rotating disk J, in which a sliding plate K is fitted, having the boot or shoe attached substantially as and for the purpose set forth.

Third, the supplemental shaft F, in combination with the polishing shaft C, and the frame or bar G, provided with the disk J, containing the sliding plate K, substantially as and for the purpose specified.

No. 52,499.—JAMES M. THOMPSON, Stoneham, Mass., and S. D. TRIPP, Lynn, Mass., assignors to S D. TRIPP.—*Heel-polishing Machine.*—February 6, 1866.—This invention consists in arranging the polishing stones or wheels, in a manner whereby either of them, two being used, is placed by an easy manipulation in the necessary position to have the heel applied to it.

Claim.—The revolving block D, placed loosely on the driving shaft C, and provided with polishing stones or wheels E E′, driven from such shaft, all arranged substantially as and for the purpose herein set forth.

No. 52,500.—HORACE H. WEBSTER, assignor to himself and SYLVESTER DAVIS, Claremont, N H.—*Planter and Seeder.*—February 6, 1866.—This invention consists in a combination of devices for seeding and planting, and a peculiar arrangement for raising the ploughs from the ground and lowering them as occasion may require.

Claim.—First, the combination of a corn planter and seed drill, substantially as herein described.

Second, my device for raising the ploughs and coverers from the ground, and lowering them thereto, substantially as set forth.

Third, the valves Y, notched wheels V, and cog wheel E, constructed, combined, and arranged substantially as described.

No. 52,501.—W. E. WILCOX, assignor to himself and LUTHER MOSES, Cleveland, Ohio.—*Car Brake.*—February 6, 1866.—Extending along the bottom of the car throughout its whole length is a steam-pipe, and at the centre of the same is a steam cylinder, containing pistons that work the brakes. The lower ends of the brake levers are provided with friction rollers that serve as brakes to the wheel, while at the same time attaching themselves to the rail. The steam-pipe is connected between the cars by means of an elastic coupling, so that the car can be easily coupled at either end.

Claim.—First, the arrangement of a steam cylinder with the hose couplings and friction wheels, when arranged and combined in the manner herein specified, and for the purposes set forth.

Second, the construction of the hose couplings, when arranged and combined with car brakes, operated by steam, as herein described and for the purposes set forth.

Third, the friction wheels to be placed between or on either side of the car wheels, as herein described and for the purposes set forth.

No. 52,502.—HUGH BAINES, Manchester, England.—*Machine for Welding the ends of Railroad Rails.*—February 6, 1866.—This invention consists in arranging a die box, having an interior form corresponding to the shape of the rail, composed of one stationary and one movable part, in which the rail is secured, and the end operated upon by a plunger, having a cross section same as the rail. The plunger is connected by a crank to a vertical hammer.

Claim.—The means herein set forth for applying steel braces to the ends of rails and railway points—that is to say, the devices designated by the figures 1, 2, 3, and the plunger or die S, the said devices being operated substantially as shown.

No. 52,503.—J. B. OBERNETTER, Munich, Bavaria.—*Mode of Securing Photographic Pictures on Ceramic Ware, &c.*—February 6, 1866.—This invention consists in producing photographic pictures on ceramic articles and glass, by treating the surface in a peculiar manner, and producing a collodionized film, which will contain the image, and then transferring the image to articles of china or glass, which are to be baked or burned in the usual manner.

Claim.—The herein-described process of producing photographic pictures on ceramic articles, including glass, to be burnt in as set forth.

No. 52,504.—AUGUST RAUH, Solingen, Westphalia, Prussia.—*Combined Sword and Pistol.*—February 6, 1866.—This invention consists in forming the base pin on which the cylinder revolves, out of the shank of the sword blade; also in forming in the breech plate a supporter for the hammer.

Claim.—First, the combination with the sword blade and its handle of a many-chambered rotating cylinder and fixed barrel, when the base pin for the cylinder is formed of the blade stock, and the several parts are arranged and operated as herein before described.

Second, the constructing and arranging the breech plate *n* so as to constitute also a hammer supporter during the loading operations, substantially as describnd.

No. 52,505.—ROBERT THEURER, Chaux de Fonds, Switzerland, assignor to CHARLES AUBENS & CO.—*Self-winding Watches.*—February 6, 1866.—This invention consists in so constructing the cover of the watch that the works will be wound up in part every time the said cover is opened and closed, and no attention need be paid to the periodical time of winding.

Claim.—Actuating the winding mechanism of the watch by the movement of the cover, substantially as herein set forth.

No. 52,506.—LEVI SKEELS, Worthington, Ohio.—*Flax-spinning Machine.*—February 6, 1866.—In this invention, by the vibration of the arm, a portion of the flax held in the jaw is intermittingly pressed forward whenever the notch of the revolving feeder comes in contact with the fixed arm; such portion is thus forced by the jaw into the stationary clamp, whence it is twisted by the revolving flyer and wound in traversing layers upon the spool. The fixed arm acting upon the revolving feeder, upon the return motion of the vibrating arm, restores the revolving feeder to its former position.

Claim.—First, the arrangement of vibratory slit holder F *f*, notched feeder G *g*, spring finger H, and stud I for detaching and feeding forward the flax, substantially as set forth.

Second, in combination with the above-claimed feeding mechanism, the clamp J J′, constructed and operating as set forth.

Third, the described arrangement of clamps J J′ and yielding rest L, for the purpose explained.

Fourth, the flyer K *k k′*, formed and arranged to wind evenly upon the bobbin as set forth.

No. 52,507.—THOMAS H. COX, Nashville, Tenn.—*Shingle Mill.*—February 6, 1866.—This invention relates to the carriage which carries the bolt to the saw perpendicularly, the bolts being dogged by means of a lever segment gear working in a rack on the dogs; the blocks are fed up to the saw by means of pinions gearing into the racks of the carriage, and operated and held by a toothed ratchet wheel and pawl, the teeth in the ratchet wheel being alternately larger and smaller to effect the sawing of alternate cuts and points.

Claim.—First, the combination of the saw B, rising and falling bed M, pitman L, and crank wheel *f*, as and for the purposes specified.

Second, the combination and relative arrangement of the shafts R R, pinions Q Q, slides N N, racks *i i*, ratchet toothed wheels T T, and fixed pawls V V, for setting the bolt as explained.

Third, in combination with the before-named shafts R R, pinions Q Q, and racks *i i*, the eccentric S, and slotted plates *k l*, arranged to operate as and for the purposes set forth.

Fourth, the combination of the lever O, spring P, toothed segment *a*, sliding toothed dog *h* and fixed dog *h*, arranged to operate as and for the purposes specified.

No. 52,508.—EVEN KOONS, Funkstown, Md.—*Tuyere.*—February 6, 1866.—This invention consists of a dish-formed tuyere which will admit the slag to flow away from the air openings and prevent it from flowing into the brick-work of the forge; also, of a conical weighted plug, which may be readily removed, but presents little resistance to the blast.

Claim.—First, the cup or dish-formed fire iron or tuyere, constructed in the manner described, for the purpose of allowing the cinders to flow away from the air-discharge openings and for the purpose of preventing the same from flowing out against the brick-work, substantially as described.

Second, the use of the conical-weighted plug, constructed as and for the purposes herein described.

No. 52,509.—CHARLES ADAMS, Philadelphia, Penn.—*Apparatus for Bleaching Oil, Paraffine, Wax, &c.*—February 13, 1866.—This invention consists of a still in which the oil is placed, and a boiler for generating steam. The pipe of the still is connected with a pump, said pump communicating with the bleaching vessel by means of a pipe; the boiler also communicates with the bleaching vessel by means of a pipe. The bleaching vessel is provided with a safety valve, and communicates with a condensing worm by means of a pipe.

Claim.—First, the vessel A, in combination with the pump F, still E, steam boiler G, pipe H K, valve B, pipe C, and worm D, for the purpose specified.

Second, the pump F, pipe *e*, pipe *h*, and valve L, when used for forcing oil in a state of vapor into the vessel A, for the purpose specified.

Third, the valve B, when used for regulating the pressure in the vessel A, where oil in vapor and steam, or paraffine or wax and steam, are kept, for the purpose specified.

No. 52,510.—Sherman W. Adams, Wethersfield, Conn.—*Hoe.*—February 13, 1866.—In this invention the hoe is pivoted at the point of attachment to the handle, and by means of a curved arm attached to the blade of the hoe and passing through a slot in the handle; the slot being provided with a set screw, the blade of the hoe can be set at any desired angle from the handle.

Claim.—The combination of the pivoted blade B, segmental arm *c*, and handle A, with devices for securing the said arm at a desired angle of obliquity with the handle, substantially as described.

No. 52,511.—William H. Akins, Dryden, N. Y.—*Plug Valve for Steam Engines.*—February 13, 1866.—The object of this invention is the introduction of a plug valve with steam openings through it, which flare so as to be much larger at the inner portion, whereby the induction port leading from the shell to the cylinder is always open, so that a very limited motion of the valve will alternately communicate with the induction and eduction pipes, thereby changing the steam instantaneously. Its novelty consists in the plug valve, provided with a chamber having a flaring shape, in combination with a shell provided with three apertures or ports, and the arrangement of two valves with flaring chambers, in combination with the shells, ports, and with a cylinder.

Claim.—First, a plug valve B, provided with a channel *f*, flaring shaped, in combination with a shell C, provided with three apertures or ports *a b c*, substantially as and for the purpose set forth.

Second, the arrangement of two valves B B′, with flaring shaped channels *f f′*, in combination with shells C C′ having ports *a b c a′ b′ c′*, and with a steam cylinder A, constructed and operating substantially as and for the purpose described.

No. 52,512.—John Alexander, Brooklyn, N. Y.—*Flat-iron.*—February 13, 1866.—This invention relates to that class of flat-irons in which the base or body is disconnected at will from the handle to allow the body to be heated. On the handle is a single spurred tenon which is combined with a suitable cavity in the base, and between the two is arranged a spring which serves to hold the handle in place. The handle is united to or separated from the base by pressing it down and partially rotating it.

Claim.—A single spurred tenon on the handle, in combination with a suitable cavity in the body or base and with a spring arranged to operate together as represented, so that the handle may be united to and separated from the base at will by a pressing down and partial rotation of the handle, substantially as herein set forth.

No. 52,513.—Charles Barry and O. W. Preston, Corning, N. Y.—*Sad-iron.*—February 13, 1866.—Through the sad-iron is a longitudinal space, within which is a plate of the same superficial size, provided at each end with a gate or door, so that when the plate is pushed down upon the inner bottom of the sad-iron by the handle which passes through the top plate, the sad-iron presents a solid exterior; but when set upon a gas-heater, the plate being pulled up to the top of the sad-iron, the heat can pass directly through the longitudinal space now open.

Claim.—The heater F, provided with plates or doors G G at its ends, and fitted within the shell *c* of the iron, substantially as and for the purpose herein set forth.

No. 52,514.—Joseph Barton, Battle Creek, Mich.—*Stove-pipe Damper.*—February 13, 1866.—In this invention hinged ring sections are so arranged, one on either side of a circular damper, that the pipe may be wholly closed, as with an ordinary damper, or, setting the close damper vertically, a central passage is made for the products of combustion.

Claim.—The combination of the hinged ring sections D D with a circular damper plate B, constructed and operating substantially as described.

No. 52,515.—Charles Belden, Middleburg, Ohio.—*Cultivator.*—February 13, 1866.—In this invention the handles are bolted to the sides of the beam. This beam is made of a bar of iron, double and bent round at the front end, through which a bolt passes for attaching the device to the end of the beam. The bar is turned at the front end and doubled closely together, excepting from where it is bent outward, and extends along so as to form a slotted opening In this opening is fitted and secured a curved standard, being secured by the bolt that connects the handles to the beam; this standard curves down on the inside of the double plough in front. The point is made of such metal as hardened steel, so as to be a self-sharpener.

Claim.—First, the frame B F, in combination with the changeable and reversible blades H K, when constructed and arranged as and for the purpose set forth.

Second, the herein-described cultivator, with changeable blades H K, when constructed and arranged as and for the purposes set forth.

No. 52,516.—Sumner A. Bemis, Springfield, Mass.—*Shirt Collar.*—February 13, 1866.—This invention will be understood by reference to the claim.

Claim.—The collar band extended so that its ends will reach behind the collar fold when the collar is buttoned around the neck, their lower edges shaped so as to conform together, substantially as and for the purpose herein specified.

No. 52,517.—George A. Bigelow, New Braintree, Mass.—*Apparatus for Reefing Fore-and-aft Sails.*—February 13, 1866.—This apparatus relates to that class which winds the sail on a rotating boom. The invention consists in the special form of the mast hooks, in the gimbals which attach the boom to the mast, and in the gearing for rotating the boom, the three devices acting in combination to produce the required result.

Claim.—The combination of the rotary boom C, the detachable mast hoops *c*, and the means of supporting and revolving the boom.

Also, the combination of the same and the gimbals *l*, or their equivalents, applied to the boom and mast, the whole constituting an apparatus for either reefing or furling a fore-and-aft sail, substantially in manner as specified.

No. 52,518.—Alfred R. Blasse, Westminster, Md.—*Egg Beater.*—February 13, 1866.—This device consists of a series of rotating beaters, so arranged as to revolve with the frame in which they are journaled, and also to rotate upon their vertical axes so as to present to the albuminous material concave surfaces which ultimately receive it and dash it back again, wires or reticulated surfaces being used to cut through and separate the particles.

Claim.—The combination in the vessel A, of the smaller vessel R, and its rotating beater, with the planetary system of revolving beaters, the whole being arranged and operating substantially as described and represented.

No. 52,519.—N. O. Bond, Hyannis, Mass.—*Brazier for Cooking Stoves or Ranges.*—February 13, 1866.—This device sets into a pot hole in the top of the stove, and has a perforated bottom. The upper edge is a flaring flange, with projecting ribs graduated for vessels of different sizes, and also adapted to receive a vessel the same size as the hole in which the brazier sets. The draught flows between the bottom of the vessel and the flange.

Claim.—The brazier A B, when constructed as herein described, with ribs *a a*, which adapt it to receive vessels of various diameters, or of the same diameter as the stove hole, without obstructing the draught.

No. 52,520.—Frederick Boshert, New York, N. Y.—*Stove-pipe Elbows and Dies for producing the same.*—February 13, 1866.—This invention consists in cutting the metal in curved form and then swaging the same in semicircular form, so that when two pipes are united they will form a quarter of a tubular cylindrical ring so that a mitre joint is dispensed with. The dies are intended to prevent breaking of the metal and the taking up of surplus metal in the double curvature.

Claim.—First, an elbow for stoves and other short metal pipes, constructed of flat plates cut in the form of quarter rings of the required width and then swaged transversely in semicircular form, with the radial recesses, to comprise the longitudinal halves of a tubular cylindrical ring, substantially as set forth.

Second, the dies A and B for preparing hard sheet metal plates for stove-pipe elbows, or other curved pipes, having projections *g* and corresponding recesses *h* by which to take up or absorb the surplus metal resulting from a double curvature, and avoiding crimping or breaking of the same, substantially as shown and described and for the purpose set forth.

No. 52,521.—John Broughton, New York, N. Y.—*Steam Gauge Cock.*—February 13, 1866.—The object of this invention is to so arrange the parts of a compression gauge cock that the valve may be ground in its seat without disturbing the joint connecting it with the boiler, dispensing with the use of tools for that operation. Its novelty consists in a detachable valve supported by and having its bearing in the body independent of the operating handle and in the tubular cap whereby to operate the valve; and also in the combination of the body, detachable valve, and tubular cap.

Claim.—First, in combination with the body and shank of a gauge cock provided with a suitable outlet passage, a detachable valve, when said valve is supported by and has its bearing in said body, independent of the operating handle or screw, substantially as set forth.

Second, in a compression gauge cock provided with a detachable and independent valve, supported by and having its bearing in the body thereof, the tubular cap whereby to operate the valve F, substantially as set forth.

Third, the combination of the body A, detachable valve F, and tubular cap G, when arranged and constructed substantially as set forth.

No. 52,522.—Geo. W. Bowlsby, Monroe, Mich.—*Ocean Telegraph.*—February 13, 1866.—This invention consists in a series of sections of electric telegraphic cables connected by ships at suitable places, having signals for finding their moorings when abandoned by the vessel in storms, and with proper devices for supporting the cable between the surface and the bottom, and also with water proof chests for packing the ends of the cables when stations are temporarily abandoned.

Claim.—First, the flying telegraph stations B^1, consisting of ships or steamers, when used for the purpose specified, and in combination with the permanent stations B^2, and the partially submerged electric cable sections.

Second, the electric cable sections, lying for the most part upon the bottom of the sea, and the ends coming to the surface of the water and supported by buoys, substantially as described.

Third, the combination of moorings Figs. 2, 3 and 4, sheet 2, with buoys B^1 and B^2, cables D D, and auxiliaries I I, P P, K K, H H, and G, sheet 1, and made substantially in the manner described and for the purpose specified.

Fourth, the water-proof packing chest, Figs. 11 and 17, with its appurtenances, for the joining of the ends of the cables, or any mechanical modification of the same, for the same object, and substantially similar.

Fifth, the combination of the great buoy, Fig. 1, with its traveller F^2, bell buoy *n*, detachable signals E E, separate water-proof compartments *h*, joining flanges and fastenings *a p i;* but I do not claim any one of them specially and separately.

Sixth, the hollow-linked mooring cable, Figs. 5, 6, 7, 14, 18, 19, 20, with the enclosed water-proof chambers *m*, for self-support in the water.

Seventh, the flanged and staked moorings shown in Figs. 2, 3, and 4, for the purpose of adding to the weight of the mooring by taking hold of the earth by means of their own weight, and gradually settling into the bottom instead of taking hold by dragging, like an anchor, nor by any other artificial means or force.

Eighth, the interior bracing of the deep-water buoys, as shown in Figs. 8 and 9, for the purpose of overcoming the pressure of the water and the prevention of leakage.

Ninth, the hollow-linked chain cable, Figs, 6, 14, 20, when used without the enclosed air chambers *m*, shown in Fig. 6, and absent in Fig. 20.

No. 52,523.—James D. Bryson, Petroleum Centre, Penn.—*Tubing for Oil Wells.*—February 13, 1866.—The object of this invention is to introduce a means whereby to obviate the difficulty heretofore experienced in operating oil wells, and in withdrawing the pump tube for repairs. Its novelty consists in the combination of the pump tube, the shorter supplemental tube, and steady pins; and also in the arms hinged around the tube.

Claim.—First, the combination of the pump tube B, the shorter supplemental tube C, and steady pins *d d d*, adapted to operate substantially as and for the purposes set forth.

Second, the arms *e e e*, hinged around the tube B, so as to operate as described.

No. 52,524.—Henry G. Bulkley, Kalamazoo, Mich.—*Drying Kiln.*—February 13, 1866.—In this invention, upon the top of a drying chamber, made of pieces of board with passages between them, is placed sawdust in layers of such thickness as may be desired to regulate the steam atmosphere.

Claim.—The use of a sawdust top, or its equivalent, and of such varied thickness as to retain so much steam generated from the drying substance or otherwise as shall expel the air, convect the heat, and protect the substances from scorching, and allow all surplus steam to pass out through the sawdust with small waste of heat and with the slightest pressure, substantially as specified.

No. 52,525.—F. A. Bunnell, Syracuse, N. Y.—*Cover for Fruit Jars.*—February 13, 1866.—This invention consists of a stopper with a flange formed on its upper part, the lower part of said stopper extending into the jar or bottle; the under surface of the flange is made concave. The stopper is held in place in the jar by means of a clamp which hooks under the metallic bearings below the rim on the neck of the jar.

Claim.—First, in apparatus for closing fruit jars and other vessels, the combination of the clamp A and cam lever F, with a metallic bearing surface placed on the cork or stopper, when the cam acts directly on such surface, or on the stopper, without the use of an intermediary slide, substantially as described.

Second, making the flange of the stopper which rests on the mouth of the jar concave in cross section on its under surface so as to retain the packing ring in a mass, and prevent it from flattening out, substantially as described.

Third, the extension of the stopper within the mouth of the jar, in combination with the flange *d*, substantially as described.

Fourth, forming inclined planes below the rim of the mouth of the jar for the purpose of drawing the clamp down on the stopper, substantially as described.

No. 52,526.—William H. Burkhart, Bucyrus, Ohio.—*Harvester.*—February 13, 1866.—This invention consists in the employment of an adjusting thumb-screw or bolt, attached to the reel standard, for adjusting the spring pendant which is suspended from the reel standard, and which has the pulley frame over the pulleys on which the reel band passes in communicating motion from a pulley on the main axle to the reel pulley; the object of the adjusting bolt is to secure at all times the proper tension of the reel band.

Claim.—The adjusting bolt in combination with the spring pendent pulley support for regulating the tension of the reel band, substantially as described.

No. 52,527.—Benajah J. Burnett, Mount Vernon, N. Y.—*Ventilator.*—February 13, 1866.—This invention is designed as an improvement upon patent No 45,814. To the interior upright trunk, which is firmly secured to the roof, is attached a series of upright tubes open to the air at the top and to the room to be ventilated below. To the top are attached deflectors which join the tubes to the overhanging cap; the tubes may be of different lengths.

The air is deflected down the windward tubes, and educted by the leeward; at the bottom are devices called distributors; inside of this series may be another, their tops extending to a cap above the other, and their bottoms reaching down to rooms on lower stories than the first series. The circulation is controlled by dampers.

Claim.—First, a ventilator having its air passages composed of tubes arranged around the interiors of surrounding trunks, and furnished with caps and deflectors, substantially as herein specified.

Second, the arrangement in one ventilator of two or more series of tubes with separate surrounding trunks and caps for ventilating different floors or stories of a house or other structure, substantially as herein specified.

Third, the sliding external sleeves or shutters in combination with the trunks, tubes, and caps, substantially as and for the purpose herein specified.

Fourth, the perforated air distributors constructed with deflectors, and combined with the lower ends of the tubes of the ventilator, substantially as herein set forth.

No. 52,528.—B. J. BURNETT, Mount Vernon, N. Y.—*System of Ventilating Houses, &c.*—February 13, 1866.—Extending upward from the ceiling of each story to be ventilated is a series of vertical air shafts, the upper end rising above the roof, each series composed of four or more cylindrical shafts, all embraced within an upright trunk extending from the ceiling of the lower story to the roof of the building, and divided transversely into sections by the several ceilings. Immediately over the top of this trunk, and above the upper ends of the air shaft, is a suitable cap to deflect the cold air downwards through the windward shafts. Situated at the bottom of each of the above sections and within said upright trunk is an upright chamber into which the cold air is drawn, and thence finds its way by communicating passages into the rooms through apertures in the ceilings. The tubes passing into this chamber have, just above it, apertures, guarded by conical deflectors; when the warm air is drawn down from the rooms through other apertures, in the ceilings and chambers, by the side of said upright chamber, it passes through these deflectors and thence out by the leeward shafts.

Claim.—First, the conical deflectors *a* situated at the lower ends of the vertical air shafts B, substantially as set forth for the purpose specified.

Second, the cold-air chamber E, with its air passages *h*, in combination with the vertical air shaft B, substantially as set forth for the purpose specified.

Third, the chamber D, enclosing the funnel-shaped deflectors *a*, arranged with reference to the vertical air shafts B, space *d*, and air passages *d'*, substantially as set forth for the purpose specified.

No. 52,529.—THOMAS BUTTERS, Concord, N. H.—*Flat-iron.*—February 13, 1866.—This invention consists of a box formed of flat iron, with a detachable handle and internal heater that can be removed for heating.

Claim.—A box flat-iron, provided with an internal removable heater, and with means for removing the same, consisting of the lever A, supported upon the box, and the spring B, attached to the handle, arranged and operating in the manner described.

No. 52,530.—WILLIAM CAWEIN, Louisville, Ky.—*Medical Compound.*—February 13, 1866.—This compound consists of certain ingredients, and is intended for cure of all diseases arising from disorders of the stomach.

Claim.—A compound produced by mixing the above-named ingredients together about in the proportion and substantially in the manner specified.

No. 52,531.—GEORGE CHAPPEL, Peekskill, N. Y.—*Adjustable Toilet Glass.*—February 13, 1866.—This invention consists in the arrangement of a looking-glass at the end of an adjustable tubular rod which is fastened to the ceiling. The lower section of the tube is attached to a chain which passes through the tube around pulleys, and the glass is adjusted by a weight at the other end of the chain.

Claim.—The adjustable mirror A, in combination with the tubular extension rod C, chain *b*, and weight D, as and for the purpose described.

No. 52,532.—THOMAS J. CHUBB, Brooklyn, N. Y.—*Quartz Mill.*—February 13, 1866.—This invention consists of a series of corrugated rings loosely placed in a strong movable rotating cylinder, so that, as the substance to be ground is passing through, said cylinder will be subject to the grinding action of the series of rings in their different positions, necessarily had, upon the mineral or other substance to be ground in passing through the mill.

Claim.—First, the employment of corrugated rings, arranged one within another, for the purpose of disintegrating mineral substances, substantially as described.

Second, the arrangement of a series of grinding surfaces within a chambered cylinder, the chambers of which communicate with each other, substantially as described.

No. 52,533.—GILBERT H. CLEMENS, United States army.—*Head Block for Saw Mills.*—February 13, 1866; antedated August 13, 1865.—This invention consists of a solid cast-iron

head block, so constructed that the knee slides upon the top of it by means of a feed screw that passes through a nut which is a part of the knee; said screw having its position on the side of, and protected by, the top of the block.

Claim.—The head block A F, knee D E, and setting screw C, when constructed and arranged, substantially as and for the purposes set forth.

No. 52,534.—JOHN C. CLIME, Philadelphia, Penn —*Musical Staff.*—February 13, 1866.—This invenion consists in producing a staff in which the true position of each note in the scale, and its relation to adjacent notes, will be instantly observed, so that the pupil will not be obliged to pause in order to calculate the effect of signs, such as flats and sharps, (*b.*)

Claim.—First, a musical staff consisting of the lines 1 2 3 4 5 of the ordinary staff, combined with the supplementary lines *x*, substantially as and for the purpose specified.

Second, the diagonal lines *w*, arranged in respect to the staff, and to the letters designating the notes on the staff, substantially as and for the purpose set forth.

No. 52,535.—JAMES C. COCHRANE, Rochester, N. Y.—*Heating Stove.*—February 13, 1866.—In the rear of the combustion chamber is an air-chamber, with wire cloth or perforated metal, facing the fire, and so near that the gas passing through will be ignited, and through which the draught from the fire will pass; horizontal or perpendicular flues communicate between this chamber and the air of the room.

Claim.—The air chamber, with wire cloth or perforated metal, facing the fire, and so near it that gas passing through will be ignited, and through which the draught from the fire will pass, and with horizontal or perpendicular flues communicating between the air chamber and the air of the room, the whole constructed as and for the purposes above described.

No. 52,536.—L. K. COLE and HOWARD SOULE, Jr., Syracuse, N. Y.—*Bridge.*—February 13, 1866.—A continuous iron chord is connected with a hollow cast-iron shoe of a form shown in the engraving. Through the truss beam and shoe, and also the cross-tie, are passed bolts for securing the whole in place. An adjustable nut is used to tighten up against the shoes.

Claim.—First, the shoe C D E F G, constructed and operating substantially as described.

Second, the continuous chord B and nut A, in combination with the shoe and brace V, or other equivalents, substantially as and for the purposes described.

No. 52,537.—JAMES CONNER, Richmond, Ind.—*Straw Cutter.*—February 13, 1866.—This invention consists in devices for giving an oscillating or vibratory motion to the box which contains the straw to be cut in connection with the downward stroke of the knife, thus producing a slicing cut.

Claim —First, the construction of a straw cutter in such a manner as that the box or straw receptacle shall have a vibratory or oscillating motion, as set forth.

Second, the spring M, with the guard P attached, constructed and operated in the manner and for the purpose as described.

Third. the lever J, arm H, and the connecting rod G, in combination with an oscillating box in straw cutters.

No. 52,538.—EMMETT COON and NATHAN HILL, Comstock, Mich.—*Horse-shoe Vice.*—February 13, 1866.—On a pedestal of suitable height is attached an upright slotted standard, the upper end of which is widened and flattened and bevelled on the extreme upper surface, which bevelled portion is provided with a steel face. Near the centre is attached a curved lever by means of a bolt nut and screw. In the bottom of the curved lever is a spring which serves to keep the said lever pressed into the slot, and keep the jaws of the vice open. The jaws are operated by means of an elbow lever and stirrup in connection with the foot.

Claim.—A vice for sharpening the calks of horseshoes, having the slotted standard *a*, with the adjustable bolt nut and screw therein, a curved lever B, spring C, elbow lever D, and hanging stirrup E, constructed, combined, and arranged substantially as herein specified.

No. 52,539.—THOMAS COTTMAN, Cincinnati, Ohio.—*Plough.*—February 13, 1866.—This invention consists in extending the head or mouldboard supporter, down and forward to a point near the front of the share, for the purpose of receiving and supporting the same.

Claim.—The extension or addition C′ to the block or head C, patented by A. Gardner, October 26, 1862, so as to secure the share A and the landside D, made in separate parts, substantially as set forth and described.

No. 52,540.—J. W. B. COVINGTON, New York, N. Y.—*Paper Socks.*—February 13, 1866.—This invention consists in making socks of paper.

Claim.—A paper sock or stocking as a new article of manufacture.

No. 52,541.—S. D. CUSHMAN, New Lisbon, Ohio.—*Lightning Rods.*—February 13, 1866.—This invention consists in so constructing the rod that it will present a large amount of surface for conducting the electric currents; and it also consists in rolling the rod out from skelps or plates in sections or strips that fit together and are formed with ribs on four sides, which act as lateral braces.

Claim —First, the ribs *a* and *b*, in combination with the rod, when constructed and arranged substantially as and for the purpose set forth.

Second, the section A and B, when constructed and combined in the manner and for the purpose substantially as described.

No. 52,542.—CALVIN B. DEYO, assignor to himself and EDGAR B. RINNER, Marengo, Ill.—*Cultivator.*—February 13, 1866.—This invention consists of a triangular frame, with the draught pole so arranged at its rear end as to admit of its being elevated and depressed at pleasure, and the attachment to each side of the frame of three plough standards substantially braced to the frame, and in the peculiar attachment of the draught by chain and pulleys.

Claim.—First, the combination and arrangement of the triangular frame B B C, draught pole A, standards D, and braces E, constructed and operating as and for the purposes set forth.

Second, in combination with the said draught pole A, triangular frame B C, standards D, and shovels D′, the arrangement of the inclined posts F F, provided with the pulleys *c c*, the pulleys G, and cord or chain I, operating substantially as and for the purposes specified.

Third, the arrangement of the toothed plates L M, slot *m*, bolt N, and O, with the draught pole A, cross-bar C, and inclined posts F, sliding in the loops *a*, all arranged and operating substantially as herein set forth and described.

No. 52,543.—JOHN W. DIXON, Philadelphia, Penn.—*Apparatus for Making Paper Pulp.*—February 13, 1866.—This apparatus consists of a strong rotary boiler, with movable hollow bearings and a perforated diaphragm; a tube connects these bearings, and passes in a coil through the furnace; a pump is used to force a circulation of the liquor through the coil and boiler.

Claim.—First, the combination of the circulating pump and revolving boiler.

Second, the combination of circulating pump, heating coil, and revolving boiler.

Third, the combination of one or both perforated diaphragms, and a revolving boiler and pump P.

No. 52,544.—JOHN W. DIXON, Philadelphia, Penn.—*Apparatus for Making Paper Pulp.*—February 13, 1866.—This apparatus consists of a strong digester, with a manhole and tube for receiving the liquor for treating the material in the digester. There is a perforated diaphragm and a lateral passage for removing the contents of the digester, closed by a plug valve or slide; there are also tubes passing from near the bottom to the top of the digester, to cause a circulation of the liquid in the digester when heat is applied to the bottom.

Claim.—First, the combination of the digester A, the perforated diaphragms D, and the lateral pulp passage E, arranged and operating as described.

Second, the combination of the digester A, and circulating tubes M M′ M″ M‴, extending from the lower to the upper part of the digester for causing a circulation of the digesting liquor by the effect of the heat on these tubes.

Third, the combination of the digester A, the tube C, and the lateral pulp passage E, arranged and operating as described.

No. 52,545.—JOHN W. DIXON, Philadelphia, Penn.—*Making Paper Pulp from Wood, Straw, &c.*—February 13, 1866.—This invention is described by the claim

Claim.—The process of treating wood or other vegetable substances, by boiling in a solution of silicate of soda under pressure, as a process or preparatory process for making pulp in the manufacture of paper from wood, straw, or other vegetable substances, substantially as described.

No. 52 546.—JOHN W. DIXON, Philadelphia, Penn.—*Process for Making Paper Pulp from Wood, Straw, and other Vegetable Fibrous Substances.*—February 13, 1866.—This invention is described by the claim.

Claim.—The process of treating wood or other vegetable substances by boiling in a solution of carbonate of potash under pressure, as a process or preparatory process for making pulp for the manufacture of paper from wood, straw, or other vegetable substances, substantially as described.

No. 52,547.—W. C. DODGE, Washington, D. C.—*Breech-loading Fire-arms.*—February 13, 1866.—In this invention a swinging breech block, provided with an upward projecting portion for holding it in place, is moved downward and then backward on a movable centre, the trigger guard lever by which it is moved being attached to it in such manner as to allow a slight longitudinal play.

Claim.—First, the breech block A, provided with the notch or shoulders *n* for locking it in position, and the bridge K for enabling it to pass the cartridges in the magazine, substantially as shown and described.

Second, giving to the rotating breech block A, when so constructed that all its parts shall move together, a vertical movement, for the purpose of locking it, substantially as herein described.

Third, uniting the lever guard B to the breech block A, as shown in Fig. 4, or in any equivalent manner, by which the lever B is permitted to move longitudinally, for the purpose of elevating the block A, substantially as set forth.

No. 52,548.—ELLWOOD DRAPER, Oskaloosa, Iowa.—*Revolving Grate for Stoves.*—February 13, 1866.—This invention consists of a revolving cylinder grate in which the fuel is burned. The side of the stove is so made that through a convenient aperture provided with a door fuel may be fed into the grate.

Claim.—First, the combination of a revolving cylinder grate, constructed substantially as described with a cooking or heating stove, for the purposes set forth.

Second, the combination of the piece G with the grate D, substantially as described and for the purpose set forth.

No. 52,549.—O. EATON, Troy, N. Y.—*Roofing.*—February 13, 1866 —This invention consists in hollowing out boards longitudinally, leaving a ridge on each edge to be covered by a cap piece of simular configuration, to be used in roofing.

Claim.—The combination with the wooden boards *c c*, and raised ribs *g g*, of the wooden cap *h*, and spaces *n*, when the parts are constructed and arranged in the manner and for the purpose herein described and represented.

No. 52,550.—JOHN and JACOB EHART, Fort Madison, Iowa.—*Washing Machine.*—February 13, 1866.—This machine consists of a tub provided with a vertical shaft, which is made adjustable vertically by means of a sleeve in combination with a disk which is supported by four small pillars on the lid, the sleeve resting upon the said disk; the disk has four circular arms attached to it, which extend down in the tub and are made flaring at the bottom.

Claim.—The shaft C made adjustable, vertically, within the tub A, by means of the sleeve H, when used in combination with the disk F, provided with arms E E, the several parts being used as and for the purposes herein specified.

No. 52,551.—JOHN E. FARIS, Baltimore, Md —*Hand Mirror* —February 13, 1866.—This invention consists of a mirror surrounded by a plane, upon which may be placed inscriptions and ornamentations, the same being protected by flanges.

Claim.—A hand mirror, having a plane surrounding the same adapted for inscriptions and ornamentation, and protected by flanges, all substantially as shown and described.

No. 52,552.—DANIEL FITZPATRICK, West Winsted, Conn.—*Cutlery.*—February 13, 1866.—This invention is described by the claim.

Claim.—Forming or securing a half bolster upon or to cutlery, by indenting one side of the piece of steel of which the tang and blade are composed, and welding the half-bolster piece to such side, and forming the half bolster upon the opposite side by swaging, substantially in the manner described.

No. 52, 553.—ANTHONY L. FLEURY, Pittsburg, Penn.—*Manufacture of Artificial Non-inflammable Wood.*—February 13, 1866.—This invention consists in forming a material to be used as wood for various purposes, by combining any vegetable fibre with animal or vegetable albumen, and a soluble silicate with the addition of sulphuric acid or a sulphate. The following fibrous materials may be used, viz., paper, paper pulp, refuse of sorghum or other cane, sea or prairie grass, leaves, straw, or any material with a strong fibre.

Claim.—First, treating fibrous materials in the way and for the purposes above specified.

Second, also the improved material which I denominate "artificial non-inflammable wood," the same being produced by the process above described, or by a substantially equivalent process.

No. 52,554.—ANTHONY L. FLEURY, Pittsburg, Penn.—*Mode of Utilizing Coal-dust and cinder.*—February 13, 1866.—In this invention the ground or crushed slag or cinder from puddling, reheating, or steel furnaces, or ground iron ore, is mixed with about fifty per cent. of bituminous coal-dust or petroleum residuum, and one per cent. of chloride of sodium. This mixture is put into an oven and heated till it is converted to a metalliferous coke, free from sulphur; this material may then be smelted in the ordinary manner.

Claim.—First, the utilization of refuse coal-gas tar and petroleum, by compounding them with the slag or cinder of puddling, reheating, and steel furnaces, or with iron ore, and making from said compound a metalliferous coke.

Second, for utilizing the slag or cinder of puddling, reheating, and steel furnaces, by compounding them with refuse coal-gas tar or petroleum, and making of said compound a metalliferous coke.

Third, for compounding iron ore with refuse coal-gas tar or petroleum, for making therefrom a metalliferous coke, as and for the purpose above specified.

No. 52,555.—HARRY FOSTER, Port Jervis, N. Y.—*Window Curtain.*—February 13, 1866.—This invention consists in mounting curtains on rollers at both ends of the curtain by

cords, so that they will revolve around the rollers, and the curtain be prevented from blowing away from the window.

Claim.—The combination of roller A A, curtain C, and cords *b b*, so as to operate in the manner herein described, for the purpose specified.

No. 52,556.—JAMES GALLATIN, Jr., New York, N Y.—*Valve for Steam Engines.*—February 13, 1866.—This invention consists in combining with an ordinary register valve which receives the steam from its under side, a secondary cylinder and piston; which is so arranged as, by means of its piston rod, to press the valve down upon its seat, and thus counteract the tendency of the steam acting upon the cavities in the face thereof to press it away from its seat.

Claim.—The valve C, with cavities *a a'*, in combination with the flat seat B, provided with ports *b b'*, *c c'*, and with a secondary piston D, all constructed and operating substantially as and for the purpose described.

No. 52,557.—J. B. GARDINER, Springfield, Mass.—*Neck-tie.*—February 13, 1866.—This invention is described by the claim.

Claim.—As a new article of manufacture a neck-tie or bow made of paper, thin metal, or other suitable substance, and embossed or struck up substantially in the manner and for the purpose herein set forth.

No. 52,558.—ROLAND R. GASKILL, El Paso, Ill.—*Gang Plough.*—February 13, 1866.—This invention consists in providing a common plough of any pattern with wheels in such a manner as will enable the poughman to ride while ploughing.

Claim.—Hinging the tongue A to plough beam B, at the middle thereof, or directly above the share H, in combination with brace L, hinge *x x*, bars F F, brace K, and axletree G, the several parts being arranged as and for the purpose set forth.

No. 52,559.—WILLIAM GERHARDT, Pittsburg, Penn.—*Apparatus for the Manufacture of Iron and Steel.*—February 13, 1866.—This invention consists of an apparatus so constructed that oxide of iron or other purifying agent may be introduced into the molten iron by means of a blast of air, the quantity of purifying agent thus introduced being measured and registered by suitable machinery.

Claim.—First, the furnace C, with one or more chemical injectors, introduced in the manner and for the purpose specified.

Second, the combination of the pipe T, box S'', pipe S, valve R, pipe Q, pipe O', double valve P, pipe O, and funnel N, forming a chemical injector as described and for the purpose specified.

Third, the funnels *n n n'' n''*, in combination with the funnel N, for the purpose specified.

Fourth, the combination of the counting and recording instrument and dial V, with the mechanism M and U, and valves P and R of the chemical injector, for the purpose specified.

Fifth, the combination of the two arches F F' and G G', with the basin E, as described.

Sixth, the flues *p p*, as described and for the purpose specified.

Seventh, the flues *b b* and pipe L, arranged as and for the purpose specified.

No. 52,560.—WILLIAM GERHARDT, Pittsburg, Penn.—*Manufacture of Iron and Steel.*—February 13, 1866.—This invention consists in running the melted iron directly from the blast furnace into the puddling furnace, and forcing beneath the surface of the melted iron oxide of iron, or other purifying substance, by means of a blast of air; the amount of purifying substance being regulated and registered by suitable apparatus, and the iron protected from the direct action of the flame by means of a coating of slag on its surface.

Claim.—First, running the melted pig iron from a blast furnace, cupola, or air furnace, directly, or by shank, into the puddling furnace, for treating it in the manner specified.

Second, injecting by blast of air directly into and under the surface of molten iron in a puddling, oxide of iron, iron ore, carbonizing or purifying agents, in the manner and for the purpose specified.

Third, gauging and recording the introduction of oxide of iron, iron ore, and other chemical agents introduced by blast of air into the molten iron, as specified.

Fourth, operating at pleasure the partial or total decarbonization of cast-iron under the slag, by the injection by blast of air, of oxide of iron, iron ore, and purifying agents, without letting the iron come in contact with the sulphurous flame of the furnace, in the manner specified.

No. 52,561.—R. P. GILLETT, Sparta, Wis.—*Axles for Vehicles and Journals for Machinery.*—February 13, 1866.—This invention consists of a mode of coating the arm of the axle, or the portion in which the wheel runs, with Babbitt metal, or other similar composition, and also in a mode of forming a lubricating passage for axles thus coated, whereby, it is believed that a very superior axle is obtained, as well as superior journals for machinery.

Claim.—The collar B on the axle A, constructed with a recess *a* for the insertion of the butt end of the boxing *e*, substantially as and for the purpose described.

No. 52,562.—W. H. GREER, Chicago, Ill.—*Washing Machine.*—February 13, 1866.—This invention consists of a series of rollers arranged radially from a common centre, the roller being of a conical form, with corrugations fitting alternately in the corrugations of the adjoining rollers, and with a suitable rubbing board pivoted and worked with a lever.

Claim.—Constructing the rubbing board of a washing machine of a series of conical, radial cogged rollers, whose operative faces present a flat surface to the vibrating rubber above, substantially as and for the purpose described.

No. 52,563.—SPENCER GUILD, Milford, N. H.—*Seeder and Fertilizer.*—February 13, 1866.—This invention consists in the combination of two slides, one for dropping manure, the other for dropping seed, together with a discharging plate and coverer, all operated by a single lever.

Claim.—First, the combination of a manure or fertilizer distributer with a hand-seeding machine, substantially as described.

Second, the plate or coverer H applied to a hand seeding machine, either with or without the manure distributer, to operate in the manner substantially as set forth.

Third, the levers E and D for operating the slides B, one or more, and plate F, substantially as described.

Fourth, the combination of the levers E D, slides B, one or more, plate F, and the cover or plate H, all connected and arranged to operate in the manner substantially as and for the purpose specified.

No. 52,564.—HOLMAN J. HALE, New York, N. Y.—*Tobacco-smoking Device.*—February 13, 1866.—In this invention a tobacco cartridge is placed upon a disk, to which is attached centrally a tube connecting with and passing through a porous stopper which fits into the pipe. In smoking, the oil from the consuming cartridge colors the upper edges of the bowl.

Claim.—First, coloring meerschaums by subjecting them to the action of tobacco smoke inhaled or passed through them, substantially as above set forth.

Second, the cover or cap C fitted on the bowl of a pipe by means of a porous stopper, or other convenient device, and perforated by a tube which enters said bowl, substantially as and for the purpose above set forth.

Third, in combination, the cover or cap C, the tube E, and the heat disperser, or the radiating device G, substantially as shown.

No. 52,565.—ALBERT HALLOWELL, Lowell, Mass.—*Apparatus for Washing Tumblers.*—February 13, 1866.—A series of cups are employed in connection with a vertical conduit or tube arranged concentrically within another tube, and provided with a series of branch tubes, each terminating in a jet or nose having a series of holes through which water is forced. Underneath the cups is arranged a basin fixed to the outer tube, and below this is a receiving cup, which is fixed to the main conduit pipe. It is designed to place the tumblers to be washed over the cups, with the bottom side up, so that after being used they can be cleaned both inside and out by the jets of water.

Claim.—One or more cups E, jet pipes and tubular annuli *d*, arranged and combined together, substantially in manner and so as to operate as and for the purpose specified.

Also, the combination and arrangement of the basin D and its discharging tube B with the conduit A, its branch pipes and cups, or the same and one or more tubular annuli *d*, as specified.

Also, the combination and arrangement of the receiving cup E with the tubes A B, the basin D, and the branch pipes and cups on the same, and the annuli, as explained.

No. 52,566.—GEO. W. T. HARLEY, Frederick, Md.—*Tailors' Measure.*—February 13, 1866.—This invention consists in determining the front and bottom parts of the "sege" or armhole by a horizontal and perpendicular scale, which is susceptible of adjustment for persons of different sizes, and by which the centre of the back is easily determined without the necessity of any calculation. An adjustable slide is also used in combination with an extensible graduated scale for determining the central graduated point between the two seges and for fixing this point preparatory to the taking of other measures. The slide is provided with a protractor and also with a pivoted blade or strap, which is graduated into inches and fractions of inches for finding distances and angles.

Claim.—First, the combination of the graduated extensible strips A A with the slides B B and the intermediate sliding protractor *b*, and pivoted scale blade *c* with the perpendicular rods G G, substantially as described.

Second, the combination of the adjustable blades E E and protractor plates D D with the central protractor plate *b* and blade and the extensible graduated strips A A, substantially as described.

Third, the long tape measure H, in combination with the perpendicular rods G G and the extensible strips A A, substantially as described.

Fourth, the short tape measure J, in combination with the extensible strips A A and perpendicular rods G G, substantially as described.

No. 52,567.—Mortimer S. Harsha, Sycamore, Ill.—*Weather Strip.*—February 13, 1866.—This invention consists of a device so arranged with respect to a door and its threshold as to close the space between them when the door is shut, and be out of the way when the door is open.

Claim.—The combination and arrangement of the strip D, the spindle *d*, and box *c*, when arranged with respect to the bearing *a*, pin *b*, and cleat E, as and for the purposes herein specified and described.

No. 52,568.—Sheldon S. Hartshorn, New Haven, Conn.—*Buckle.*—February 13, 1866.—This buckle is made in two pieces of wire, of any suitable metal, by swaging them into the required shape and then putting them together as shown in the engraving, so that the tongues will rest across and be supported by the bow part.

Claim.—The combination of the bow part, Fig. 2, with the tongue part, Fig. 3, when the tongue part is so formed that two portions of it lap as at *b*, and the tongues rest on and across the shanks of the bow part, and the whole is constructed substantially as herein described.

No. 52,569.—George B. Hartson and E. J. Woolsey, New York, N. Y.—*Centrifugal Machine.*—February 13, 1866.—This invention consists in providing the bottom plate of the apparatus with a hub having a pulley below the plate; the said hub fitting over the shaft, around which it revolves. It also consists in providing the top of the machine with apertures covered by hoods, which take in the air as the apparatus revolves, to assist in drying the sugar.

Claim.—The method of constructing the centrifugal separator, with a hollow hub in the centre of the lower plate thereof, as described; the said hub being provided with a pulley for the driving belt below the bottom and fitted to run on, and combined with, the stud of the base plate, in the manner and for the purpose specified.

Also, the said centrifugal separator, in combination with the cap or cover provided with holes or channels covered with funnel-shaped hoods, as described, to force currents of air in and through the said apparatus, to aid in effecting the separation, as described.

No. 52,570.—George Havell, Newark, N. J.—*Bolt.*—February 13, 1866.—This invention consists in forming a bolt of two pieces of metal, one resting upon the other, in such a manner that the bed forms a slide and clasp for the bolt to work in.

Claim.—The bolt, Fig. 1, constructed substantially as described.

No. 52,571.—Henry Hodgson, Fremont, Ohio.—*Beehive.*—February 13, 1866.—In this invention the comb frames are suspended from removable bars, and the lower portion of the hive is divided by a partition into two parts, the lower of which is movable; entrances to the two apartments thus made being provided upon opposite sides of the hive. The lower portion of the hive has a perforated metallic cover, and the upper box has a perforated metallic bottom, the perforations corresponding to each other in one position only of the box.

Claim.—First, suspending the comb frames from removable bars M M′, in combination with the vertical partition I J, substantially as and for the purpose above set forth.

Second, dividing a hive by means of a partition I J, made substantially as shown, in connection with making entrance-ways, provided with perforated movable covers on two opposite sides, or ends of each division, so that when one division is isolated from the other the entrance to each can be established on opposite sides, substantially as described.

Third, in beehives, which have a lower main hive, and a surplus upper box, a perforated movable metallic sheet or plate F on the top of the main box or hive, and a perforated metallic bottom on the surplus box, the perforations in which are made to coincide, or are made not to coincide, for the purpose above explained, by changing the position of the surplus box, substantially as described.

No. 52,572.—Jesse L. Hutchinson, Baltimore, Md.—*Evaporator for Hot-air Pipes.*—February 13, 1866.—This invention consists in the combination of an enlargement of the hot-air pipe with a water-reservoir, so placed within as to expose a surface for evaporation, and capable of being supplied with water from the outside.

Claim.—The combination with an appropriate enlargement of the hot-air pipe of a water-reservoir, so placed within as to expose a surface for evaporation, and capable of being supplied with water from the outside by automatic device, or otherwise, as may be desirable.

No. 52,573.—Otis N. Inman, Providence, R. I.—*Braiding Machine.*—February 13, 1866.—In this machine the bobbin carrier is adapted to receive the edges of the slotted table and of the bladed bobbin drivers, and also the teeth on the said drivers, so that the carrier will be firmly supported by the said parts while it is traversing the serpentine slot in the table. The bobbin carrier is switched from one circular slot to another by means of a guide upon the carrier and frogs or switch bars upon the frame of the machine, so that there will be no jarring movement given to the carrier at such points.

Claim.—First, guiding and directing the bobbin carriers from one circular passage to

another by means of projections or switches *c c* formed on the frame plate C, acting upon a rudder g^3 on the carrier, substantially as described.

Second, constructing the bobbin carrier with the shoulder supports $f\ g^2$ and an intermediate recess for receiving the teeth on the carrier wheels, substantially as described.

Third, the manner, substantially as herein described, of arranging the contrivance which controls the delivery of the thread from the bobbin.

No. 52,574.—JOHN JANN, New Windsor, Md.—*Burning Fluid.*—February 13, 1866.—This invention consists in mixing with benzine, sweet oil or linseed oil, by means of which a burning fluid is produced free from the explosive properties of the benzine.

Claim.—The combination of benzine, sweet, and linseed oil, in about the proportions mentioned.

No. 52,575.—C. F. JAUBIET, Aurora, Ill.—*Metallic Packing for Stuffing Boxes.*—February 13, 1866.—This invention consists of a follower, which is placed in the inner end of the cavity of the head through which the rod passes, and is free to turn upon said road, and has a concave recess in its interior end, for the purpose of admitting steam to the packing, which rests upon said follower. This follower is held in its position by the gland, and has in its face springs for the purpose of holding the packing rings in their proper position; these rings are made to overlap each other, so as to form steam tight joints, and are smaller in diameter than the recess in which they are placed, so that steam which enters through the follower may act upon the exterior thereof, and thus keep them in steam-tight contact with the rod. The outer ends of the packing rings are also in contact with the gland, and are ground to a projection thereon, which prevents the escape of steam at that point.

Claim.—First, the construction and arrangement of the follower D, substantially in the manner and for the purpose described.

Second, the construction and arrangement of the ring plate C, substantially in the manner and for the purpose herein described.

Third, the arrangement of the cylindric springs *k*, with the turning follower D, compressible packing and steam admission passages of the stuffing box E and A, substantially as described.

Fourth, the combination of the packing ring plate, springs and follower, with a stuffing box, substantially as and for the purpose described.

Fifth, the combination of the compressible packing springs *k k*, and steam passages, as described, for the purpose set forth.

No. 52,576.—ISAAC W. LAMB, Rochester, N. Y.—*Dish Stand.*—February 13, 1866.—This invention consists in placing around the standard of a dish stand, a cup or receptacle for containing water or other fluid.

Claim —A dish stand having a cup or its equivalent, suitable for containing water or other fluid, formed around its standard, substantially as and for the purpose herein described.

No. 52,577.—JACOB F. LANDIS, Harrisburg, Penn.—*Hanging Curtains, Blinds and Maps.*—February 13, 1866.—Into the frame at the top of the window are inserted three screws, and a strip that is attached to the top of the paper blind is then placed against the window frame. A thumb screw being then screwed against the said strip, the blind will be always adjusted in a straight line, and can be instantly removed without tearing the blind.

Claim.—The construction of the screw D, with its eye E, in combination with its thumb screw G, and slat *c* for holding the curtain, when arranged and combined as herein described and for the purposes set forth.

No. 52,578.—LEROY M. LARSH, Richmond, Ind.—*Water Wheel.*—February 13, 1866.—In this invention the chute terminates in a descending scroll, within which scroll a wedge-formed partition divides the flow, causing it to act equally on the right and left wheel, said wheels being fixed upon a single shaft.

Claim.— First, the termination of the scroll C, in a saddle-shaped apex effecting a division of the current, as desired.

Second, the combination of the saddle A, and plates B B′, with the trunk D, and scroll C, operating as set forth.

No. 52,579.—RUDOLPH LEDIG, Newark, N. J.—*Spirit Level.*—February 13, 1866.—This invention consists of a spirit level, of which the arm that carries the spirit bottle is pivoted at one end to the frame of the level, and at the other end is connected with an index and scale, so that the workman, by the use of this instrument, not only knows whether a piece of work is level, but also how much it varies from a level at any given point, and for any given distance.

Claim.—First, the combination in a spirit level, of the vibrating screw K, with the arm C, the nut J, and the frame A, substantially as described and for the purpose set forth.

Second, the combination in a spirit level, of the arm C, with the frame A, arms F G, index H, and clamp L M N, substantially as described and for the purpose set forth.

No, 52,580.—HENRY G. LEHNERT, Boston, Mass.—*Bugle, Horn, Cornet, &c.*—February 13, 1866.—This invention is described by the claim.

Claim.—The construction of any slide of their tuning pipes withat a pering bore, which, when in place in the instrument, becomes a prolongation of the taper of the said passage, as described.

No. 52,581.—L. H. SONDHEIM, New York, N. Y.—*Supplementary Seat for Water Closets.*—February 13, 1866.—This invention consists of a supplemental seat, with cleats to rest on, and is made in sections, and hinged together, so as to fold up for removal.

Claim.—A supplementary seat for water closets, so constructed as to be folded up, substantially as described.

No. 52,582.—BENJAMIN T. LOOMIS, New York, N. Y.—*Revolving Fire-arm.*—February 13, 1866.—In this invention the handle of the revolver is so formed and hinged to the frame that it may be folded under, and cover the cylinders for making the arm compact and portable in the pocket. On opening the handle the trigger is set ready for action; the cylinder is slotted through one side to its centre to allow it to be easily removed laterally.

Claim.—First, in combination with a part of a pistol stock attached to the barrel, and containing a lock, as described, a swinging piece that may be opened and shut, and grasped in the act of discharging the pistol, the combination being substantially such as described.

Second, the slotted chamber piece U, constructed substantially as described.

Third, in combination with a pistol stock, one part of which swings upon the other, the trigger and springs, so combined together, as described, that the trigger protrudes when the stock is opened, and returns to its place after the discharge.

No. 52,583.—SAMUEL MALES, Cincinnati, Ohio.—*Cider Mill.*—February 13, 1866.—In this machine the intermeshing rollers are so arranged, and their crushing and gearing surfaces so formed as to mutually clean each other. The periphery of each roller is composed of a number of equi-distant cylindrical segments along their centres with ribs, separated from each other by half-round grooves. Each rib of one roller enters and sweeps around a half-round groove in the other roller.

Claim.—First, the combination of the square-faced ribs J, and round grooves K, in crushing and stripping rollers H and G, of the within-described cider-mill.

Second, in combination with the crushing and stripping rollers H G, the gear wheels F F' F', with interdental spaces, whose bottoms *f* are chamfered or sloped outward, as and for the purposes herein specified.

No. 52,584.—GEORGE MATTHEWMAN, Brooklyn, N. Y.—*Press.*—February 13, 1866.—This invention consists in the arrangement of a lever, links, and arms, the lever being operated in front of the machine, and at a low point; in a shaft, wheel, and nut to raise the spindle; in the arrangement of certain parts to raise a clearing device in a horizontal position; and in the combination of springs with other devices, adapted to increase and diminish the force with which the plate carrying the clearer is pressed down in advance of the spindle.

Claim.—First, the arrangement of the lever G, links H, and arms A', or their equivalents, the lever G being operated in front of the machine, and at a low point, substantially in the manner and for the purposes herein set forth.

Second, the shaft *m*, wheel M, and nut D, adapted to raise and lower the spindle C and its connections, substantially as and for the purposes herein set forth.

Third, the within-described combination and arrangement of the connection L, or its equivalent, the gear wheels L' L', and the frame *l*, or its equivalent, adapted to raise and lower the clearer I in the horizontal positions, substantially in the manner and for the purposes herein set forth.

Fourth, the within-described combination and arrangement of the springs P P', spindle C, and threaded wheels T' T', adapted to increase and diminish the force with which the plate I is pressed down in advance of the spindle C, substantially as and so as to realize the advantage of requiring little height for the entire mechanism, as herein set forth.

No. 52,585.—J. B. MCCLANATHAN, Horicon, Wis.—*Spring Bedstead.*—February 13, 1866.—This invention consists in an arrangement of the cross-rails and slats of a bedstead, whereby a very easy and spring frame, on which to place the bedding, is produced.

Claim.—The combination and arrangement of the slats D, rails B, springs C and F, pegs or pistons E, and shanks *c*, as and for the purpose specified.

No. 52,586.—JOHN MCDERMOTT, Washington, D. C.—*Thill Coupling.*—February 13, 1866.—This invention consists in applying between the jaws of the coupling a bushing of anti-friction metal provided with a flange, leaving an opening between it and the lug, and with a tubular projection or socket, whereby dirt will find no lodgment and rattling be prevented.

Claim.—The use of the anti-friction facings or bushing pieces *c c*, as described, in combination with the head of the thill shank and the jaws of the lug, to increase the extent and durability of the rubbing surface.

Second, coupling the head of the thill shank in the jaws of the lugs by the use of bushing pieces *c e*, so made and arranged in respect to said jaws and said head that said head will act as a key to secure said bushing pieces, while at the same time said bushing pieces act as a coupling to unite the thills to the axle, without the aid of a bolt.

Third, the use of bushing pieces *e e*, made with a flange on their inside surfaces to lap over and hold the ends of the thill shank, and a tubular socket or projection on their outside surface to fasten in the jaws of the lugs, and to receive the bolt, substantially as described.

No. 52,587.—WILLIAM NASH, New Britain, Conn.—*Knife Sharpener.*—February 13, 1866.—This invention consists of a device for sharpening knives, in which two screw-threaded rolls are let in a suitable frame, secured in a handle, between which rolls the knife is to be drawn for sharpening it. The whole device, in general appearance, resembles and matches articles of table cutlery, and can be placed on the table with equal propriety.

Claim.—The knife sharpener herein described, the same consisting of the screw-threaded rollers C, C, frame A, and handle B, arranged and combined substantially as set forth.

No. 52,588.—WILLIAM NEVINS, Lyons, N. Y.—*Curing Sorghum.*—February 13, 1866.—This invention consists of a diagonal piece of plank, with plain pointed wooden pins fastened in each corner, so constructed as to lay the corn diagonally across, and fasten it with pins, which can be removed if required. Corn stacked in this manner is kept dry, and sheds the rain.

Claim.—The described method of stacking corn, sorghum, &c., by means of the frame A *b c c*, substantially in the manner and for the purpose herein set forth.

No. 52,589.—BARAK T. NICHOLS, Newark, N. J.—*Stirrup.*—February 13, 1866.—This invention consists in forming a stirrup of one piece of wood, or other suitable material, shaped and perforated to receive the stirrup strap.

Claim.—The stirrup A, figures 1 and 2, substantially in the manner and for the purposes described.

No. 52,590.—HARRISON OGBORN, Richmond, Ind.—*Shovel and Tongs Combined.*—February 13, 1866.—This invention consists in hinging by a suitable joint one leg of a tongs to the handle of a shovel, so that the instrument can be used for both shovel and tongs.

Claim.—Constructing a combined shovel and tongs, having the leg *a* attached to the handle of the shovel by means of the hinge joint C, pivoted substantially as set forth.

No. 52,591.—EDWARD OPPENHEIMER, New York, N. Y.—*Calendar Watches.*—February 13, 1866.—This invention consists in a watch which shows on its face or dial, besides hours, minutes, and seconds, the day of the month or the date, which appears through a small aperture in the dial, being marked on a disk, which revolves under the dial, and to which an intermittent motion is imparted once in twenty-four hours.

Claim.—A watch provided with an additional dial *i*, under the main dial, said additional dial being marked with figures from 1 to 31, and so arranged that it receives an intermittent motion once every twenty-four hours, whereby said figures are successively brought opposite an aperture in the main dial, as and for the purpose described.

No. 52,592.—JOHN H. PARSONS, Quincy, Mich.—*Car Coupling.*—February 13, 1866.—This invention consists of an iron frame, sliding up and down in grooves in the drawhead of a railroad car, supporting above a drop-pin, and below a catch-pin to be displaced by the entrance of the connecting link, the whole constituting an automatic car coupling.

Claim.—First, the arrangement of the draw head A, with its second V-shaped hole or opening on the bottom. The grooves *d d*, in connection with the pin-sustaining bars H G, and rods E F, substantially as shown and described.

Second, the arrangement of the top beveled pin or catch *y*, and the spring *m*, substantially as described and set forth.

No. 52,593.—J. H. PARSONS, Quincy, Mich.—*Foot Warmer.*—February 13, 1866.—In this invention the foot warmer is connected with a stove pipe by branch pipes, one entering at a point somewhat lower than the other, and between the two is a damper in the stove-pipe, which being closed directs the flow of the products of combustion into and through the foot warmer.

Claim.—A foot warmer, formed by connecting the drum or box A, of the warmer, with an ordinary stovepipe by means of the small pipes C and D, substantially as described and for the purpose set forth.

No. 52,594.—WILLIAM PARSONS, Cleveland, Ohio.—*Mode of Securing Pipes and Bolts in Oil Wells.*—February 13, 1866.—This invention consists of an apparatus for the purpose of securing pipes, bolts, &c., at any required point in an oil well, and of preventing the same from falling through the apparatus by accident.

Claim.—The eccentric or cam B as described, constructed and operated upon substantially as and for the purpose set forth.

No. 52,595.—L. C. PERCIVAL, Philadelphia, Penn.—*Wagon Brake.*—February 13, 1866.—This invention consists in the arrangement of a rod-brake lever and levers to which the breast straps of the team are attached, all being arranged in such a manner as to operate automatically when the vehicle is descending an eminence.

Claim.—The levers E E pivoted to the braces F F at the rear part of the reach or perch C, and provided with shoes G at their outer ends in line with the rear wheels B, in combination with the rods I J and the levers K K, to which the breast straps of the team are attached, all arranged and applied substantially as and for the purpose set forth.

Also, the spring pins L attached to the draught pole D, in combination with the lips *i* in the rod J, substantially as and for the purpose specified.

Also, the strap M applied to the thills N and connected with the rod I, substantially as and for the purpose set forth.

No. 52,596.—JOB W. PETTINGILL, Rockport, Ill.—*Lifting Jack.*—February 13, 1866.—The head is formed of one piece tapering towards the upper end with a space between its sides, in which space is arranged a slide. Hung to the head by means of a pin is a link, to which is pivoted a lever, the head of which engages in a rack placed on three sides of the slide, the same being held in any desired position by a proper pawl.

Claim.—The adjustable link D and pawl C′, in combination with the slide C D, lever D′, and head A, the whole being constructed and arranged so as to allow the slide C to be raised to or near to the top of the head A by changing the pawl C′ to the upper part of the head A, and securing the link D, substantially as set forth.

No. 52,597.—I. N. PLOTTS, New York, N. Y.—*Buckle.*—February 13, 1866.—In this invention a buckle, having no tongue, has the inner edges of the bars set or raised above the plane of the face, so as when the strap is drawn taut to produce a sharp bite; the inner edges of the side strips of the frame are depressed below the plane of the under side. Upon the inner edge of the side strips a projecting lip is formed.

Claim.—First, setting, twisting, turning, or stamping the bars B and side strips A′ of the buckle, at any desired angle or angles, substantially as described.

Second, attaching to or forming upon the inner edges of the under surface of the side strips A′ of the buckle, lips c^1, substantially as and for the purpose specified.

Third, in a buckle of substantially the character described, milling, serrating, or otherwise roughening the edges of the lips *c c′*, as well as the raised edges of the bars and the depressed edges of the side strips, substantially as and for the purpose specified.

No. 52,598.—JOSEPH PLUMB, Clarksville, N. J.—*Furrowing Device for Corn Planting.*—February 13, 1866.—This invention consists in the employment of runners which are shod with iron, having attached to their outer side a small plough mould of cast-iron, which makes a furrow sufficiently deep to receive and retain the seed, corn, &c., so that it may be readily covered.

Claim.—The marking sled with the mould boards or shares attached to the runners, substantially as described and represented.

No. 52,599.—B. F. PORTER, Nashua, N. H.—*Button-holes for Paper Collars.*—February 13, 1866.—In this invention a flap covers the large space through which the button or stud enters. The shank or thread is then drawn forward to its position, and the flap is pressed down behind it.

Claim.—The improved button-hole as made with the openings *a* and *c* and the lip or fly *b*, arranged substantially as specified.

No. 52,600.—T. W. PORTER, Bangor, Me.—*Vehicle.*—February 13, 1866.—This invention consists in making the shaft sockets, the clip or shaft coupling, tip or coupling, the pole end, and the perch coupling, all of malleable iron, with a clasp for the clip, of wrought-iron, and so constructed as to cause great saving of material and labor.

Claim.—First, the socket A, figure 3, made of malleable iron, with the projections *d d* and *b b*, as an article of manufacture and sale, for the uses and purposes set forth.

Second, as an article of manufacture and sale, the malleable iron clip or shaft coupling, as shown in Fig. 10, with the lips I I and tube *d*, cushion *n*, plate *r*, and wrought-iron clasp *e′*, substantially as shown and described.

Third, as a new article of manufacture and sale, the malleable iron tip or coupling *k*, Fig. 10, substantially as shown and described, and for the purposes specified.

Fourth, as an article of manufacture, the pole-end H of malleable iron with the straps *b b*, and doubletree pivot *a*, and projections *d d*, constructed and arranged as described and for the purposes specified.

Fifth, as an article of manufacture and sale, the malleable iron perch coupling L, Fig. 8, with projection or strap *c*, and step *i*, constructed and arranged as described and shown, and for the purposes specified.

No. 52,601.—JOHN S. PRESTON, Mechanicsville, Penn.—*Machine for Raking and Loading Hay.*—February 13, 1866.—This invention consists in the use, in connection with a rake, of

two endless aprons or belts, the one within the other; the inner and shorter one being provided with teeth, which, at the lower end of the machine, protrude through the upper apron, but are gradually withdrawn therefrom as the belts are carried forward.

Claim.—The endless toothed apron E, when used in connection with the endless elevator F, and arranged so that the teeth of the apron will be withdrawn from the elevator at a certain point, in combination with the rake G, all being applied to a mounted frame, and arranged to operate substantially as set forth.

No. 52,602.—A. RAFFEL, New York, N. Y.—*Hoop-skirt Frame.*—February 13, 1866.—In this invention a series of permanent ribs are secured to a top and bottom piece, and are each provided with a supplementary and movable rib that is hinged to it a short distance from its upper end, and is adjusted by a clamp and pin by which it is secured to the stationary rib. The top and bottom pieces are also independently adjustable.

Claim —The adjustable frame, constructed with movable ribs, substantially as described, in such a manner that it may be expanded or contracted without changing the form of the skirt at the upper end.

No. 52,603.—WILLIAM R. REESE, Tremont, Penn.—*Method of Attaching and Lubricating Car Wheels.*—February 13, 1866.—Between two of the spokes of the wheel, and adjoining the hub, is a chamber that serves as an oil reservoir, being open at both ends, and cast with the wheel. The open ends are closed by two plates which are connected and clamped firmly to the ends of the oil chamber by screw bolts, the outer plate covering the end of the hub of the wheel, and the inner plate having a circular opening made in it for the axle to pass through.

Claim.—The oil chamber B in the wheel A, closed at its ends by plates C C′, which are connected by bolts D, and arranged as shown, so as to secure the wheel on the axle, a communication being formed between the chamber B and the interior of the wheel hub *b*, and all arranged substantially as and for the purpose specified.

Also, the spring F, applied to the opening *d* in the oil chamber B, substantially as and for the purpose set forth.

No. 52,604.—JESSE REYNOLDS, Philadelphia, Penn.—*Dust Screen for Stove and Furnace Doors.*—February 13, 1866.—This invention consists of a dust screen so made that when the fire box door is open it is applied over the aperture, and extends down so as to cover an upper section of the ash-pit door. It fits by flanges on the sides and top to the furnace, but is open at the bottom so that a draught is admitted to the fire chamber.

Claim.—The dust screen G, constructed and adapted to a furnace, heater, or stove, substantially as and for the purpose herein set forth.

No. 52,605.—SAMUEL REYNOLDS, Pittsburg, Penn.—*Oven for Annealing Iron.*—February 13, 1866.—This invention consists in constructing an oven for decarbonizing and annealing iron so that all heat will be thrown in the ovens under arches, which act as reflectors only, and do not allow the heat to be lost through the masonry.

Claim.—First, the flues, openings, or passages S S S.

Second, the passages M M M.

Third, passing the fire under the arches K K, and directly in the ovens by the flues M M, and out of the ovens by the flues S S S instead of over the arches K K.

No. 52,606.—HARRISON RICE, Springfield, Ohio.—*Cultivator.*—February 13, 1866.—This invention consists in the combination and arrangement of a horizontal and vertical frame with adjustable axle bearings, windlass, chains, and removable seat, whereby the ploughs are given an adjustment vertically by means of the windlass and chains to any required height, and also be capable of having a lateral motion so as to allow the earth to be thrown to and from the corn, and to follow the irregularities of a crooked row.

Claim.—First, the combination of the three-sided double frame *a a a a*, and *a′ a′*, with the removable seat *g*, and adjustable axle bearings, in the manner described, for the purpose specified.

Second, the combination of the main frame with the vertical frame *d*, windlass *e*, chains *f*, and joints *c c*, arranged and operating conjointly, in the manner substantially as described, for the purpose specified.

No. 52,607.—CELIUS E RICHARDS, North Attleborough, Mass.—*Paper Collar.*—February 13, 1866.—This invention will be understood by reference to the claim.

Claim.—An improved turn-down collar, as constructed, with its inner fold *c* of a less width than its outer fold *d*, and with the back button hole formed in the outer fold, as specified.

No. 52,608.—CELIUS E. RICHARDS, Attleborough, Mass.—*Button.*—February 13, 1866.—In this invention the collet is convex next the cloth; the button has holes through it. A disk inside the cloth has spurs which pass through the cloth through the button, and return to the back of the button to be turned down in the concavity of the collet. An elastic disk is placed between the cloth and disk inside the cloth.

Claim.—First, forming the collet or neck of the button with a concavity and a central perforation, combined substantially as described, for the purpose specified.

Second, the mode described of fastening a button with a collet or neck, as described, by means of a shield having a number of spurs that pass through the button from the back side of the fabric, and are secured in front of the button in a manner to conceal their ends, substantially as specified.

Third, in combination therewith a soft washer, as described, between the shield or its equivalent and the fabric, substantially as and for the purpose specified.

No. 52,609.—FRANK H. RICHARDS, Lansinburg, N. Y.—*Balanced Slide Valve.*—February 13, 1866.—This invention consists in the arrangement of two separate and distinct valves within the steam chest, one bearing upon the valve seat proper, and the other upon a seat formed upon the under side of the steam-chest cover. These valves are both moved simultaneously by the same rod, to which they are held by collars and nuts screwed upon said rod. There is also a seat fitted to the back side of each of the valves, and held in place by the collars and nuts aboved named, between which there is a wedge-shaped nut for adjusting the valves to their seats, which is accomplished by turning the valve rod, thereby pressing forward the nut, which operates upon the valve in such a way as to force them apart, and thereby adjust them to their respective seats.

Claim.—First, the arrangement of the two slide valves F and G in the same chest, opposite each other, and having the pressure of the steam upon their under sides, as herein described, so that their respective pressures shall be mutually compensatory.

Second, the wedge-nut *d*, operated as herein described, for adjusting the valves to their respective seats.

No. 52,610.—CHANDLER ROBBINS, Chicago, Ill.—*Pianos.*—February 13, 1866.—This invention consists in applying a spring to the hammer, so that when the key is depressed the hammer will be forced downward against the string, and when the pressure is released the hammer will be thrown up from the string. The strings are flat, and may be made short, and a mellow, sweet, and powerful tone be obtained therefrom, regardless of short length. The sounding board is suspended from the frame, allowing complete vibration.

Claim.—First, hanging the sounding box or board to the iron frame, substantially as specified, allowing of the most complete vibration, as is herein set forth.

Second, the combination of the lever G, the strap *e*, and the hammer I, as and for the purpose herein specified.

Third, the strings F, made flat, as and for the purpose set forth.

No. 52,611.—SMITH SANDERS, Fort Plain, N. Y.—*Fence.*—February 13, 1866.—This invention consists in the construction and arrangement of flexible standards, and the manner of bracing and sustaining them, whereby the fence is prevented from displacement or sagging.

Claim.—First, the combined construction and arrangement of the fence, as herein set forth, the same consisting essentially of the standards made up of the parts *a b c*, sections made up of the rails *f f*, and cleats or battens *g g*, the wire loops *k k*, and pins *i*, and the tightening bolt *l*, the whole operating substantially as and for the purpose specified.

Second, the particular construction of the skeleton standard composed of the flexible vertical strips *b b*, for clamping and holding the sections, the brace boards *c c*, bracing part way up the strips, and having the grain running with the hypothenuse of the angle, and the base pieces *a a*, the whole being arranged as herein described, and used either with or without the stakes *d d*, as set forth.

No. 52,612.—ELLIOT SAVAGE, assignor to himself, GEORGE S. HARWOOD, and GEORGE H. QUINCY, West Meriden, Conn.—*Process of Annealing Steel and other Metals*—February 13, 1866.—In this invention the article to be annealed is heated in a bath of cyanide of potassium, or equivalent material, which will exclude oxygen, and which is soluble in water, and then plunged into a cold solution of metallic salts, as sulphate of copper, &c.

Claim.—First, the method of annealing steel or other metals, substantially as hereinbefore described—that is to say, by heating the same in a substance which shall form upon its surface a protecting coating or film, soluble in water or metallic cooling solutions, as set forth.

Second, the use of cyanide of potassium for the purpose of heating steel or other metals in the process of annealing.

Third, the use of metallic solutions for the purpose of cooling steel or other metals in the process of annealing.

Fourth, the employment, in the process of annealing, of cyanide of potassium as the heating medium, in combination with a metallic solution as the cooling medium.

No. 52,613.—MICHAEL SIMMONS, Howardsville, Ind.—*Roof.*—February 13, 1866.—The hinged sections are each composed of three or more pieces of plank set together and connected on their under sides by means of cleats. The joints in each section are covered by strips to prevent water from passing through. The roof is designed to adjust itself to the inclination of the place or material to be covered.

Claim.—The hinged sections A A, constructed and arranged together as and for the purpose herein specified.

No. 52,614.—CHARLES D. SMITH, Washington, D. C.—*Eyelet.*—February 13, 1866.—This invention consists in splitting, nicking, or notching the small end of the eyelet so as to facilitate the turning of it over when fastening it into the holes in the article to be joined together.

Claim.—An eyelet which is slit, nicked, or indented, substantially as and for the purpose specified.

No. 52,615.—HAMILTON E. SMITH, Cincinnati, Ohio.—*Roll for Clothes Wringers.*—February 13, 1866.—These wringers are composed of cylindrical blocks or sections of India-rubber adapted to be slipped upon a shaft. Between every two consecutive blocks are introduced wads or disks of felt or cloth, or other fibrous material.

Claim.—First, a clothes-wringer roll composed of sections C of rubber, or its equivalent, with interposed disks D, of cloth or other fibrous fabric, and rigid washers B, having a positive rotation with the shaft, substantially as set forth.

Second, a pair of rolls formed in sections, so arranged as to break joints, in the manner and for the purpose explained.

No. 52,616.—URIAH SMITH, Battle Creek, Mich.—*Parallel Ruler.*—February 13, 1866.—In the two parallel arms of the ruler are found slots parallel to the edge of the ruler. Through these slots pass pins from the ends of cross arms, secured on the underside from slipping. The other extremities of the arms are pivoted to the two sides of the ruler at certain points, so that in opening the sides of the ruler their parallelism will always be insured.

Claim.—The slots *e f*, or their equivalents, in the parallel arms of the ruler A B, the cross arms C D, the points *l m*, thumb screw *i*, shank *j*, and scale *k*, all combined and arranged substantially as and for the purpose herein set forth.

No. 52,617.—HENRY SPLITDORF, New York, N. Y.—*Connection for Galvanic Batteries.*—February 13, 1866.—This invention consists of a clamp made of one piece of wire bent to the desired form, and provided with screws and nuts at both ends, in such a manner that by tightening up said nuts the wire is caused to take a firm hold of the carbon or zinc, or of any other element or elements used, and a clamp is obtained which is cheaply made and readily connected and disconnected.

Claim.—A clamp for connecting the elements of a galvanic battery, said clamp being made of a piece of wire bent so as to form loops at both ends, and provided with screw threads and nuts which serve to tighten up said loops, substantially as and for the purpose set forth.

No. 52,618.—C. C. STANSELL, Middleboro', Mass.—*Wick Adjuster.*—February 13, 1866.—This invention consists in a concave pen-shaped device with the end bent over, attached to a handle, to insert between the wick and the tube to elevate or adjust the same.

Claim.—A new mode of raising and adjusting the wicks of lamps by the use of a metallic, concave, pen-shaped spring, pointed sliding clasp, or any similar device which may be introduced into the wick, or between the wick and inside of the tube, for the purpose of compressing and stiffening the wick, thereby rendering it susceptible of easy adjustment.

No. 52,619.—J. L. SUESSEROTT, Chambersburg, Penn.—*Attaching Shafts to Vehicles.*—February 13, 1866.—This invention consists in connecting claws to the shafts, and having an India-rubber block on the shaft box, so that the hooks or claws cannot be detached when the shafts are horizontal.

Claim.—First, constructing the shaft box A, with a step D, for supporting an India-rubber block, and the recess *a*, for holding it in place when used in combination with a block E, constructed substantially as and for the purpose set forth.

Second, the box A, having a bar *b*, step D, and India-rubber block E, arranged as set forth when used in combination with the hooked termination of the shafts C, substantially as and for the purpose set forth.

No. 52,620.—FRANCIS C. SUMNER, Stoughton, Mass.—*Shoe Lacing Cutter.*—February 13, 1866.—This invention consists of a device composed of two knives and a tablet or plate arranged together, the whole combined with a screw clamp.

Claim.—The above new or improved shoe lacing cutter or machine, as composed of the two knives and the tablet or plate arranged together substantially as described.

Also, the combination and arrangement of the tablets, the two knives and the screw-clamp, the whole being substantially as described.

No. 52,621.—H. L. TAYLOR, Fredonia, N. Y.—*Pole and Thill Coupling.*—February 13, 1866.—This invention consists in applying to a thill coupling a key, holding a removable block in place, between which and the washer of the bolt is interposed a spring, the elasticity of which will securely retain the parts in place. When the key is removed, the uncoupling is easily effected.

Claim.—First, the combination of the hook E *e*, and draught bolt *g*, with the follower block K, India-rubber spring *j*, or its equivalent, washer *i*, and self-locking key *o*, arranged and operating in the manner and for the purpose shown and described.

Second, constructing the block K, with the lips *l l*, and cheeks *m m*, in combination with the hook E *e*, and rubber *j*, substantially in the manner and for the purpose described.

Third, the employment of the lever S, provided with the hook *t*, and spur *u*, in combination with the extension *q*, and hole *r*, for inserting and removing the key *o*, substanstially as described.

No. 52,622.—LEMUEL and MINOR TAYLOR, and EDWIN COX, Jordan, Wis.—*Beehive.*—February 13, 1866.—This invention consists in the use of an air-tight device for covering the top of the hive, said device consisting of a rectangular frame surrounding the upper opening of the hive, with leather, or some similar substance, above and below it, and held in place by a covering board firmly screwed to the hive; also in the use of a moth guard in the form of an inverted U, with the inner side shorter than the outer, placed under the hive; also, in constructing the interior boxes of slats of wood and strips of paper.

Claim.—First, a sealing strip or frame G, in connection with the band or clamp I, constructed and applied to the top of the hive to render the same air-tight, substantially as described.

Second, the moth guard C, constructed in the form described, coated with grease and applied to the bottom of the hive, substantially as set forth.

Third, constructing the brood chamber V, and spare honey box E, of slats and paper, in the manner substantially as described.

No. 52,623.—SIMEON TAYLOR, Worcester, Mass.—*Organs and Melodeons.*—February 13, 1866.—This invention consists in bringing the sub-bass of an instrument under the hands of the performer, however unskilled he may be, so that the sub-bass can be thrown off when not needed, and the manual keys and levers be released and operated with great freedom.

Claim.—First, the combination with hinged rods *m* of the slotted levers E, as shown and described, whereby the levers and valves can be readily connected and detached, as set forth.

Second, the combination with frame D, arms D′ D′, and levers E of the elevating piece H, with its cam-like projections I I, substantially as set forth.

No. 52,624.—J. R. TEMPEST, Philadelphia, Penn.—*Skate.*—February 13, 1866.—This invention consists of transversely sliding bolts between the heel and the sole of a boot or shoe, and metallic plates slotted and fixed to the said heel and sole. Thus the sliding bolts can be readily inserted so as to hold the skate tightly on the bottom of the boot or shoe.

Claim.—The employment of the sliding bolts C C′, in combination with the staples D D D′ D′ in the sole plate A of the skate, and with the slotted plates B B′ fixed to the bottom of a boot or shoe, the said parts being arranged to operate together as and for the purposes described.

No. 52,625.—JOHN TYLER, West Lebanon, N. H.—*Turbine Water Wheel.*—February 13, 1866.—This invention consists of a turbine wheel, the capacity of which may be varied according to the power required from it, or to the supply of water, the annular gate having an exterior flange at its lower part to confine the influx of water to the lower portion of the wheel.

Claim.—The cylinder E encompassing the wheel B, and provided with a rim or flange *a* at its lower end, to fit within the scroll A, substantially as shown and described, varying simultaneously or by a single manipulation the capacity of the wheel and scroll, as set forth.

Also, connecting the gate D with the cylinder E by means of the flange *a*, and thus permitting the gate and cylinder to be moved simultaneously, and enabling the supply of water to the wheel to be commensurate with the capacity of the wheel and the scroll, substantially as described.

No. 52,626.—CLEMENS UNVERZAGT, Richmond, Ind.—*Hand Loom.*—February 13, 1866.—In this invention the bar on the cam block collar depresses successively the treadles as it is carried along by the crossing spiral groove. The adjustment of the compound bevelled wheel to any position on its axis allows the take-up to be timed as desired to any point in the vibration of the batten.

Claim.—First, the cam block *e*, with its collar *f* and the jaws 4, constructed and operating as and for the purpose described.

Second, the stepping bar 12, in combination with the jaws 4 and collar *f*.

Third, the compound bevel and spur wheel 2 with its adjustable arm 6, as and for the purposes set forth.

Fourth, the combination of the compound wheel 2, arms 6 and 7, and ratchet wheel 8, operating substantially as set forth and described.

Fifth, the elastic band upon the head of the shaft *b*, in combination with the set screw *x* and compound wheel 2 and its connections, for operating the take-up of the cloth, for the purposes set forth and described.

Sixth, the short levers *s s′*, in combination with the picker staffs *q q′* and the spring *t*, arranged and operated as described.

No. 52,627.—WILLIAM B. VINCENT, Boston, Mass.—*Machine for Cutting Bread, Soap, and Black Lead.*—February 13, 1866.—This invention consists in combining a series of revolving cutting wheels with a series of sliding troughs.

Claim.—The combination and arrangement of the cutting wheels W W′ W″ W‴ with the sliding trough C C′, made substantially as and for the purpose set forth.

No. 52,628.—ADDISON VROOMAN, Kokomo, Ind.—*Faucet Measure.*—February 13, 1866.—This invention consists in the arrangement of the double orifices near the top and bottom of the faucet, and the measures in combination with the vent indicators.

Claim.—The arrangement of the double orifices near the top and bottom of the faucet when the latter is used in combination with the measures *a* and *b*, constructed and operating in the manner described, whereby liquid may be drawn and discharged, measured at the same time, substantially as specified.

Also, the faucet and measures *a* and *b*, in combination with the vent indicators *c d*, constructed, arranged, and operating together in the manner described for the purpose specified.

No. 52,629.—J. F. WARNER, Oskaloosa, Iowa.—*Fence.*—February 13, 1866.—This invention consists in supporting the boards of the fence by means of cross braces with notches in said braces, and connecting the panels by lapping the boards, clasping the ends between the braces, thereby dispensing with the use of nails, the whole being self-supporting and fastened together by means of pins of wood or other material.

Claim—The construction and arrangement of the braces and cross-bars applied to the boards or panels of the fence, substantially as herein shown and described.

No. 52,630.—HERVEY WATERS, Northbridge, Mass.—*Machine for Rolling Metals.*—February 13, 1866.—In this machine each roll is constructed with a series of spiral grooves extending from one end to the other; the rib of metal left standing between any two grooves of the one roll fitting into, as the roll revolves, a corresponding groove in the other. The device for holding and feeding the blank to the rolls consists of nippers arranged upon a carriage which is drawn forward by a cam upon the axis of one of the rolls, and immediately after being released is forced back to its original position by springs.

Claim.—The rolls with their spiral dies and fence, or guide, when constructed and operated substantially as described.

Also, the carriage and grasping holder, when constructed and operated in combination with rollers, substantially as described, whether the dies upon said rollers be spiral or otherwise.

No. 52,631.—WILLIAM WEAVER, Nashua, N. H.—*Screw and Bolt.*—February 13, 1866.—This invention consists in perforating the end of the bolt or screw, making a round tapered hole, and using a square tapered tool for driving them, in place of the ordinary screwdriver.

Claim.—Perforating the heads of screws and screw-bolts of all kinds that are made with a screw thread and operated by a lever power applied to their heads, substantially as described and for the purposes set forth.

No. 52,632.—SAMUEL H. WHITTLESEY, Appleton, Wis.—*Well Borer.*—February 13, 1866.—This invention consists of a conical pointed borer, shaped something like an ordinary iron reamer, having three or more curved cutting faces at equal distances around its point, and is connected with the base of a hollow cylinder by a socket joint; its curved cutting faces take a spiral form and are continued up to the top of the cylinder, thereby forming parallel spiral grooves on the outside of the cylinder; the edges of the spiral grooves act as reamers, the grooves form elevators in which the silt is raised nearly to the top of the cylinder, where the grooves are intersected by openings which admit the silt to the inside of the cylinder, from which it is discharged when full, by raising the instrument from the well and removing the borer.

Claim.—First, the burr or borer D, constructed substantially as above described, with curved cutting edges I, which spring from the point of the instrument.

Second, in combination with the burr or borer D, the hollow cylinder A, having spiral grooves which are continuations of the grooves between the cutters I of the burr or borer, and which terminate at openings G at the top of the cylinder, and having also spiral reaming edges J K L, substantially as above described.

No. 52,633.—JOSEPH WIDMAN and FRENCH MULLICA, El Paso, Ill.—*Plough.*—February 13, 1866.—This invention consists in the arrangement of an axle, hounds, and two wheels, on which is mounted a driver's seat; any common plough may be attached to the said hounds and operated by means of a lever, chain or cord, and pulleys.

Claim.—The attaching of the plough beam E to the axle A, through the medium of the hounds C C′, in combination with the draught pole F and bar K, attached to the plough beam, and all arranged to operate in the manner substantially as and for the purpose set forth.

Also, the arrangement of the cord or chain I, pulleys G H, and lever J, arranged and applied to the plough beam E, draught pole F, and bar K, substantially as and for the purpose specified.

No. 52,634.—WILLIAM WOODBURY, assignor to himself and MELLEN BRAY, Chelsea, Mass.—*Self-adjsting Pulley for Fishing Boats.*—February 13, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the combination of a block or pulley with a circular bracket under such an arrangement as to allow of the pulley revolving upon its axis, while the latter is free to move within the plane of the bracket, substantially as set forth.

Second, the employment of a block when made with an opening at the top, and provided with a guard in combination with a bracket, as and for the purposes herein set forth.

No. 52,635.—JAMES H. ALEXANDER, administrator of the estate of THOMAS K. ALEXANDER, Decatur, Ill.—*Seed Planter.*—February 13, 1866.—This invention consists in the combination and arrangement of certain oscillating reciprocating plates, by means of which a proper amount of seed is received from the hopper or grain box, and delivered at the required distances.

Claim.—First, the combination of the oscillating plate A, having four seed cells in it, with the reciprocating plate B, having two delivery holes in it, for the purpose of alternating the cells with the delivery holes, substantially as described.

Second, in combination with an upper oscillating and an under reciprocating plate, the grooves and cam projections on one, and the button and stop on the other, so that four oscillations of the upper plate shall produce but two reciprocations of the under plate, substantially as and for the purpose described.

Third, in combination with a four cell oscillating plate, a double-spring cut-off, so that each cell shall pass twice into the hopper, and twice under the cut-off, for each and every of its dropping operations, substantially as and for the purpose described.

Fourth, in combination with the spring cut-off and turned lip thereon, the sloping out of the tops of the cells as at E, so that the excess of protruding grains may be swept or brushed back without breaking or injuring them, substantially as set forth.

No. 52,636.—SAMUEL BROWN, assignor to himself and LEON LEVEL, San Francisco, Cal.—*Block Disengaging Hook.*—February 13, 1866.—This invention consists of the use of a bed plate at the end of the block, and its jaws and segments, which are operated by a slide in combination with a recessed arm and lever. One of the principal combinations of devices, constituting a disengaging hook, is for lowering a boat from her tackle.

Claim.—The bed-piece J, with jaws I I, and the segments E E, operating by the slide F, with recessed arm G and lever L M, or their equivalents, substantially as and for the purposes herein specified and set forth.

No. 52,637.—JOHN P. BUZZELL, assignor to himself and HENRY HEMENWAY, Clinton, Mass.—*Hoop Skirt.*—February 13, 1866.—In this invention several sections of the hoops are omitted, so that in sitting the wearer does not press upon any portion of said hoops.

Claim.—A hoop skirt provided with an opening *a* in its back part, produced by cutting out portions of the hoops B′, whether said opening is left empty or filled with netting or other flexible material, substantially as and for the purpose herein described.

No. 52,638.—REMINGTON G. CHASE, assignor to himself and ROBERT T. LUCAS, Alexandria, Va.—*Saw Set.*—February 13, 1866.—This invention consists of an adjustable saw set operated by means of a trigger and hammer, with the handle and stock made of one piece, and shaped like a pistol.

Claim.—The construction of the devices A B C E H and J, when arranged and combined as herein described and for the purposes set forth.

No. 52,639.—GEORGE W. CHEESMAN, assignor to himself and J. W. OSBORNE, Ansonia, Conn.—*Clasp for Skirt Hoops.*—February 13, 1866.—This invention, consisting of a clasp to embrace the ends of the hoops, has a base and two sides perpendicular thereto. At a suitable distance from the top of each turned up side a notch is cut at each end so as to render the bending easy, to form the fourth side of the two portions thus turned down to enclose the hoop ends.

Claim.—In clasps for skirt hoops, notching their ends, substantially as and for the purposes above set forth.

No. 52,640.—CHARLES J. EVERETT, assignor to LOCKWOOD and EVERETT, New York, N. Y.—*Rendering Apparatus.*—February 13, 1866.—This invention consists in connecting the digester of a rendering apparatus with a furnace, in order that the vapors passing from said digester may be thoroughly superheated before escaping into the fire.

Claim.—First, consuming the noxious gases, steam, or vapors as they issue from the apparatus while in operation, or after the fire has been withdrawn therefrom, by the use of a separate consuming furnace connected to or in communication therewith.

Second, the use of a superheater in combination with said consuming furnace and in connection with the apparatus for the purpose specified.

Third, passing the superheated steam, gas, or vapor through a coil of pipe placed in the

digester for the purpose of raising the temperature in the digester, and to dry or crisp the scrap as set forth.

Fourth, carrying the heat directly from the furnace through a coil of pipe placed in the digester, and so arranged as to discharge in the chimney, making said coil a flue from the furnace to the chimney, for the purpose of raising the temperature of the digester, and to crisp or dry the scrap as set forth.

Fifth, avoiding the condensation of the noxious vapors and gases against the uncovered part of the digester, by carrying the steam and water jacket all the way around it so as to entirely envelop the digester as set forth.

Sixth, the use of a deodorizer filled with chloride of lime or its chemical equivalent for this purpose, in combination with a digester for rendering and refining lard, tallow, and other fatty or oleaginous matter for the purpose of deodorizing and disinfecting the noxious gases as they issue therefrom.

No. 52,641.—P. W. GATES, assignor to himself and D. R. FRASER, Chicago, Ill.—*Stamping Head.*—February 13, 1866.—This invention consists in uniting the chilled part of the stamp head to the soft part by casting it upon the face of the latter, which has been provided with converging dovetailed grooves which retain it securely thereto.

Claim.—First, the compound hard and soft metal shoe A B C, constructed and produced substantially in the manner described.

Second, constructing the stem A with a flange B, which has intersecting dovetail grooves in its lower face, so that the metal which forms the part C of the shoe shall be united to it by the act of casting said part C, substantially as described.

Third, the intersecting dovetail grooves formed in the under side of the soft metal stem A, of a compound hard and soft metal shoe, substantially as described.

No. 52,642.—S. J. GOUCHER, assignor to MILTON FOREMAN, Philadelphia, Penn.—*Well-boring Apparatus.*—February 13, 1866.—This invention consists of an apparatus for boring artesian wells; the construction being such as to permit the attendants to readily discontinue the process of boring, and as readily resume the same.

Claim.—The shaft *c*, with its permanent pulley I, and loose pulleys I′ and J, combined with the driving shaft H, adjustable shaft *c*, its pulley J′, the drum C, and walking beam F, all substantially as and for the purpose described.

No. 52,643.—JOSEPH H. GREENLEAF, assignor to JOHN M. MARLIN and GEORGE H. SNOW, New Haven, Conn.—*Darning Spool.*—February 13, 1866.—In this invention the spool has divisions, and thus combines several spools for several kinds of yarn or thread; its ends are enlarged and rounded to serve to stretch the work upon.

Claim.—The darning spool above described as a new article of manufacture.

No. 52,644.—THOMAS J. JONES, Summit, N. J., assignor to C. J. EAMES, New York, N. Y.—*Piston Packing.*—February 13, 1866.—This invention consists in constructing a spring of any suitable material in the form of a double M, connected at the front, but opened at the back in such a manner as to permit it to conform to the circle of the packing rings and piston head, when used in different sized cylinders.

Claim.—As an improvement in springs for piston packing, the double M shaped spring closed in front and open at the back in the manner herein specified and represented.

No. 52,645.—E. C. C. KELLOGG, Hartford, Conn., assignor to himself, S. F. BENNETT, and D. H. BURRILL, Little Falls, N. Y.—*Lacing Device.*—February 13, 1866.—This invention consists of a knife blade, a punch, a needle, and an awl, arranged with reference to each other upon two pivoted levers.

Claim.—The punch *k*, knife blade *h*, needle *m*, and awl *n*, arranged with reference to each other upon the pivoted levers A B, substantially as set forth for the purpose specified.

No 52,646.—GEORGE C. OVERHEISER, Ionia, Mich., assignor to himself and JACOB C. ROBIE, Binghamton, N. Y.—*Sewing Machine Hemmer.*—February 13, 1866; antedated February 5, 1866.—This device is screwed to the plate of a sewing machine. On the upright part of the base of the frame is a hinge, by means of which a bar is attached to the upright part and base of the frame, and is made movable. On this bar a spring bears so as to keep the gauge firmly on the material. A smoothing spring is placed parallel with and under the above-mentioned bar, while the other end presses upon the arm of the sliding gauge at the point where it passes through the clamp jaws, and thus serves to keep the folds of the work smooth.

Claim.—The combination of the hemmer N, sliding gauge K M, clamp L, pressure spring H, smoothing spring I, hinged bar G, and frame A, arranged and operating in the manner and for the purpose set forth herein.

No. 52,647.—CHARLES H. PERKINS, assignor to THE PERKINS SHEET IRON COMPANY, Providence, R. I.—*Method of Treating Sheet Iron Plates.*—February 13, 1866.—In this in-

vention the scales are first removed and the surface brightened by mechanical means, such as the ordinary revolving rubber bed ; the brightened plates are then heated in a close oven till the blue color of Russia iron is developed.

Claim.—Giving to common sheet iron the lustre, finish, and color of Russia sheet iron, by the process substantially as described.

No. 52,648.—JACOB H. SCHWEIN, Cincinnati, Ohio, assignor to himself and CHRISTIAN RUMMEL.—*Hot Air Furnace.*—February 13, 1866.—In this invention the fire pot is covered by a slab of soapstone or tile; from the upper part of the pot smoke and flame are conducted by a passage into an annular flue communicating with a series of vertical flues, the smoke being compelled to pass wholly around to the exit flue. The flues are made of brick or tile, and so closed on the inner side and top as to form a large internal chamber, where heat may be led off as desired ; external air is led into this chamber at the bottom, and warmed in its passage thither by passing near the fire.

Claim.—The fire pot A B C, slab D, smoke passages E F G, and caliducts or ventilating passages K L M, the whole being arranged and operating substantially as described.

No. 52,649.—SAMUEL SELDEN, Fairview township, Penn., assignor to JOHN C. SELDEN, Erie, Penn.—*Hinge.*—February 13, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The movable pintle, constructed with the fixed washer or enlarged centre *q*, in combination with the two leaves of a hinge, constructed substantially as described.

No. 52,650.—ADDISON SMITH, Perrysburg, Ohio, assignor to himself, DAVID M. MEFFORD, and GILES BOALT, Norwalk, Ohio.—*Preservatory.*—February 13, 1866.—This invention consists of a chamber constructed so as to exclude the external air, and divided into compartments, closed by suitable bars. The vessel is provided with flues communicating with the different compartments ; the air is drawn out of the chamber through these flues, and made to pass through a deoxygenating chamber by means of a bellows, or a lamp, and is returned after being deprived of its oxygen.

Claim.—First, a receptacle compartment or box for fruit or other edibles, having two orifices or series of orifices communicating respectively with opposite ends of a deoxygenating chamber or circuit outside of said receptacle, and provided with a forced circulation, substantially as and for the purpose set forth.

Second, in the described communication with one another, the following elements, to wit: the closed preserving chamber A, whether subdivided or otherwise, and the closed combustion chamber or circuit D.

Third, in the described communication with one another, the following elements, to wit: the closed preserving chamber A, whether subdivided or otherwise, and the combustion circuit D, and the mechanical circulation G‴.

Fourth, in the described communication with one another, the following elements, to wit: the closed preserving chamber A, with the deoxygenating chamber G′.

Fifth, in the described communication with one another, the following elements, to wit: the closed preserving chamber A, and the desiccating chamber G″.

Sixth, the closed preserving chamber A communicating with the described deoxygenating and desiccating circuit G, provided with a forced circulation, the whole being combined and operating substantially as and for the purpose set forth.

Seventh, a closed preserving chamber, having the meandering ventilating ducts L *l l′ l″*, in which a circulation and deoxygenation is maintained by alternative connection with the combustion circuit D and with the deoxygenating circuit G, substantially as herein set forth and described.

Eighth, a closed preserving chamber, in which a circulation, deoxygenation, and desiccation of the air is maintained by the use of a desiccating chamber G″, in combination with a deoxygenating chamber G′ or D′, and a forcing apparatus G‴.

Ninth, the series of closed preserving chambers, provided with the meandering ducts L *l l′*, having a forced circulation and communicating with a closed deoxygenating chamber G′ and a closed desiccating chamber G″, substantially as set forth.

No. 52,651.—JOHN E. TRAVIS, assignor to himself and ELON FRANCISCO, Greenville, Ill.—*Gang Plough.*—February 13, 1866; antedated February 5, 1866.—In this invention the plough has its beams above the bolster of the axletree, and they are secured directly to the tongue. An arm projects forward from the axletree and passes through a loop on the under side of a cross-bar that connects the forward end of the beams. Arms are hinged to the bolster and connected to the beams by a hinge joint, and these arms are operated by a lever or foot piece attached to them. By depressing this foot piece the ploughs are raised from the ground.

Claim.—First, the sliding bar C, when used in connection with the axle B and bolster D and regulating bolts *a a′*, as and for the purpose set forth.

Second, the hinged braces H H, the levers H″ H″, and posts F′ F′, for the purpose of attaching the plough frame of gang ploughs to the bolster thereof, when such parts are constructed and employed as described and set forth.

No 52,652.—JULIUS WATERMAN, New York, N. Y., assignor to himself and JOSEPH MAYER, Brooklyn, N. Y.—*Buckle.*—February 13, 1866.—This invention consists of a buckle formed of two rectangular loops, one over the other, and will be readily understood by reference to the engraving.

Claim.—The buckle for skirt bands, &c., formed of two rectangular loops, one over the other, as specified.

No. 52,653.—J. H. EHRHARDT, Dresden, Saxony.—*Machine for Determining the Load of Car Axles.*—February 13, 1866.—This invention consists in an apparatus which is intended to balance the weight of a locomotive tender or railroad car, so as to bring an equal pressure to bear on each side of the wheel.

Claim.—First, the supporter A B with lip *a* and leg *d*, in combination with the scale beam C and steelyard D, or its equivalent, constructed and operating substantially as and for the purpose described

Second, the adjustable wedge *i*, in combination with the slides *f*, bearings *g*, scale beam C, and supporter A B, constructed and operating substantially as and for the purpose set forth.

Third, the index *m*, in combination with the steelyard D, supporter A B, and scale beam C, constructed and operating substantially as and for the purpose described.

No. 52,654.—ALEXANDER HENRY, Edinburgh, Scotland.—*Breech-loading Fire-arm.*—February 13, 1866.—In this invention the arm is provided with a tilting barrel, which is locked in position by a bolt from the breech-plate on the stock, controlled by a rotating shaft with an external thumb lever on either side, which is so arranged as to prevent the hammer striking until securely locked, and which, on the other hand, cannot be released until the hammer is at half-cock. A sliding cartridge retractor, of peculiar form, is operated by the tilting of the barrel.

Claim.—First, the construction of the curved face of the extractor with a dovetail and pin for fixing it to the extractor bar, substantially as hereinbefore described and shown.

Second, the employment of a lever for actuating the movable bolt for locking the barrel, in combination with the hammer, under the arrangement hereinbefore shown and described, so as to prevent the barrel from being unbolted until the hammer shall have been moved to half-cock, and to secure the complete locking of the barrel before the piece can be discharged, substantially as set forth.

No. 52,655.—BARTHELEMY PICARD, Paris, France.—*Process of Tanning Hides and Skins.*—February 13, 1866.—The process requires only one day. The materials may be used in the following proportions: Hides prepared for tanning, two hundred pounds; essence of turpentine, seven pounds; sumac, ten pounds; and catechu, thirty to forty pounds. The skins are first treated with the solution of sumac and catechu while hermetically enclosed in a fulling tun. The essence of turpentine is then put in; a wash of potash or soda will remove the odor of turpentine.

Claim.—The process of tanning hides and skins by the employment of essence of turpentine with sumac, catechu, or other vegetable or mineral coloring essence, in combination with the movement of the hides or skins in a fulling tun, or under a fulling hammer, substantially as and for the purposes herein set forth.

No 52,656.—ANTON K. KERPELY, Oravitza, Hungary, assignor to A. L. FLEURY, New York, N. Y.—*Manufacture of Iron.*—February 13, 1866.—This invention is described by the claim.

Claim.—Freeing pig-iron from sulphur, phosphorus, arsenic, copper, and zinc, by blowing chlorine salts with a blast of air into the melting chamber of a blast furnace, into a cupola furnace, or into a Bessemer smelting pot, substantially as herein specified.

No. 52,657.—ISAAC E. ALLEN, Windham, Maine.—*Head Block for Holding Boots and Shoes.*—February 20, 1866.—This invention consists in the combination of a rest for the toe of the boots, with an inclined plane provided with notches, a piece of metal having pivots to fit into the notches, in connection with a lever upon which said metallic piece rests, and a bar and spring.

Claim.—First, the combination of the rest A, the inclined plane P, the piece N having the projection *m*, the lever L, bar *t*, and spring *r*, arranged and constructed substantially as and for the purposes set forth.

Second, the use, with the above combination, of the block to rest upon the two portions of the inclined plane P and of the strap Q, substantially as and for the purpose herein described.

No 52,658.—JOSHUA BARNES, New York, N. Y.—*Spring Bed Bottom.*—February 20, 1866; antedated February 5, 1866.—This invention consists of an extensible frame, so formed as to fit different sized bedsteads, and combined with slats and elastic cords, so formed as to make a spring bed bottom.

Claim.—First, the combination of the elastic cord, passed through the rings with the rods and tube, for the purpose of making an elastic suspension of the slats upon an extensible frame, in the manner substantially as above described.

Second, the combination of the movable stanchion with and resting upon the elastic cord coiled around a transverse bar, in the manner substantially as above described.

No. 52,659.—JOSEPH BARTON, Battle Creek, Mich.—*Paper and Cloth Collars.*—February 20, 1866.—In this invention the band is made of muslin next the neck, and paper without; the collar is of paper above, the band being turned down outwardly, and thus presenting the muslin outwardly; the collar is pasted upon this edge.

Claim.—A paper collar with a woven sweat-band lining and flexible connection, applied between the two pieces of paper forming the exposed part of the collar and to the inner surface of the band of the collar, the same being an improved new article of manufacture, and claimed as such, as set forth.

No. 52,660.—JOHN BEAN, Hudson, Mich.—*Pump.*—February 20, 1866.—The two valve plates are formed each of two wings, and are covered with leather on their upper sides. In the pump stock is placed a wedge-shaped block, the lower end of which extends to near the valve plate. On opposite sides of the pump extend two arms, serving as a bearing to a rod formed into a crank at each end. The two cranks give motion to two rods which hook into bars, fitted, one on the axle, and the other on the end of the shaft.

Claim.—The combination of the valve plates F and G with the wedge-shaped block H, the rods *m* and *n*, the arms *k*, and the bars *o*, the whole constructed and arranged as and for the purpose herein set forth.

No. 52,661.—LUMAN BISHOP, Cortlandville, N. Y.—*Press and Strainer for Cream, Paste, &c.*—February 20, 1866.—This invention consists of a cylindrical case, with a tube at the bottom, to which is attached a strainer. A plunger works in the tube, to press the contents through the strainer.

Claim.—First, the cylindrical-formed strainer G, or its equivalent, with screw attachment, in combination with the tube F, as described.

Second, the lateral apertures H H, or their equivalents, in combination with the tube and piston, as described.

No. 52,662.—ALLEN M. BLANCHARD, St. Louis, Mo.—*Printer's Chase.*—February 20, 1866.—This device is formed of four straight bars fitted together, so that they may be adjusted to any size of form required, without the use of quoins.

Claim.—A printer's chase formed of four straight bars A fitted together, so that they may be adjusted to any size of form required, without the use of quoins, substantially as set forth.

No. 52,663.—SAMUEL R. BOWIE, Portland, Maine.—*Sleds.*—February 20, 1866.—This invention consists in applying a bent lever to a sled or sleigh, so that by means of a rope or cord the sled or sleigh can be steered, checked, and stopped.

Claim.—First, the combination of the levers *b* and *c*, the plate *n*, the rope *e*, and pulleys *d*, substantially as and for the purposes specified.

Second, the combination of the parts *n b* and *c* with the device shown in Fig. 3, substantially as described and for the purposes set forth.

No. 52,664.—WILLIAM BOYNTON, Auburn, N. Y.—*Churn.*—February 20, 1866.—This invention consists of a shaft provided with breakers, and with air tubes connected to the outer beaters, so arranged as to throw the air in the cream.

Claim.—The combination of the frame B, the shaft C, the arm G, the bevel wheels *m* and *n*, the drawing wheel P, and air tubes I, the whole arranged substantially as and for the purpose herein described.

No. 52,665.—J. W. BRADLEY, New York, N. Y.—*Skirt Hoop.*—February 20, 1866.—This invention consists in weaving, braiding, or otherwise connecting two or more flat hoop-skirt wires, placed with their broad surfaces towards each other.

Claim.—Hoop-skirt springs composed of two or more thicknesses of metal combined together, substantially as described.

No. 52,666.—STEPHEN B. BRAGUE, New York, N. Y.—*Hand Stamp.*—February 20, 1866.—This invention consists in fastening the impression-ribbon in pieces on to the face of the stamp and over its edges by a band or spring, thus avoiding complication in the arrangement necessary for prepared ribbon.

Claim.—The attachment of the prepared ribbon directly to the face of the stamp by means of a band or other fastening applied around the stamp, substantially as herein set forth.

No. 52,667.—STEPHEN B. BRAGUE, New York, N. Y.—*Sponge Cup.*—February 20, 1866.—This invention consists in combining a spring with the sponge, within a suitable water-cup, so that after the sponge has been pressed into the water and moistened, and allowed to rise, all superfluous water will be drained therefrom.

Claim.—The combination of the sponge C, the spring B, and the cup A, substantially as herein specified.

No. 52,668.—Stephen B. Brague and William S. Starr, New York, N. Y.—*Hand Stamp.*—February 20, 1866.—Through the stationary die which is arranged beneath the plunger is a rotating ring provided with types.

Claim.—The rotating ring *r* provided with types, and passing through the stationary die beneath the plunger, substantially as set forth for the purpose specified.

No. 52,669.—Francis F. Braillard, New York, N. Y.—*Pocket Toilet Case.*—February 20, 1866.—This invention is explained by the claim.

Claim.—A pocket toilet case constructed and having a mirror, a pocket for a comb, and elastic loops for the reception of scissors, tweezers, and knife arranged within it, substantially as herein described.

No. 52,670.—C. N. Briggs, Philadelphia, Penn.—*Well-boring Machine.*—February 20, 1866.—This device consists of a frame in which are mounted two axles, on one of which latter is mounted a driving-wheel, a fly-wheel, and a cam. The other axle is adjustable laterally and has mounted upon it a right-angled lever, the lower arm of which is curved up at its outer end, and is operated by the cam of the other axle. The upper lever has attached to its outer end the drill-rope which passes over a pulley in the derrick.

Claim.—The combination of the shaft C with its cam G, and the adjustable shaft D with its arms H and I, the whole being constructed and operating as and for the purpose described.

No. 52,671.—Lorenzo W. Brown and Isaac L. Frankem, Indianapolis, Ind.—*Hot-air Furnace.*—February 20, 1866.—Around the reservoir in a base-burning furnace is an air chamber to which external air is admitted by pipes from an outer chamber, passing through the chamber of combustion. The chamber of combustion is divided by several vertical plates which extend from the top of the air pipes nearly to the top of the chamber.

Claim.—The smoke-chamber D, partitions O, and air pipes H, when arranged in combination with the reservoir B, grate C, and smoke-pipes G G′, substantially in the manner and for the purpose set forth.

No. 52,672.—Charles B. Boyle, New York, N. Y.—*Lens.*—February 20, 1866; antedated February 16, 1866.—This invention consists in attaching to the object glass of any instrument a meniscus lens, constructed and acting according to a certain theory.

Claim.—The use of a glass cornea in front of the objective lens of a microscope or telescope.

No. 52,673.—Morgan W. Brown, New York, N. Y.—*Process for Gilding and Ornamenting Surfaces.*—February 20, 1866.—This invention consists in coating the surface of wood, stone, and other similar material, with a composition of soluble silicate of soda or potash, glycerine, and a metallic or earthy oxide, after which a coating of bronze powder is applied. A coating of alkaline silicate is then applied over the bronze, and the article is heated to 150° or 200° Fahrenheit.

Claim.—First, the mode or process of preparing an alkaline silicate preparatory to its use and application, and for the purposes of gilding, bronzing, &c., substantially as herein described.

Second, the mode or process of applying the solution of prepared alkaline silicate, and the gilt, bronze, and other metallic powdered substances to surfaces, in the manner and for the purposes substantially as described.

Third, the use and application of certain specified degrees of heat for the purposes substantially as set forth.

Fourth, the use and application to my mode or process of varnishes and lacquers for purposes substantially as described.

No. 52,674.—Henry C. Bull, Louisville, Ky.—*Brick Machine.*—February 20, 1866.—This invention consists in a feed-wheel for drawing the tempered mud from the hopper and forcing it down into the moulds, said wheel being armed with a series of movable blades. A mould wheel is provided with radial compartments, and revolving around a fixed central cylinder.

Claim.—First, the feed wheel F, armed with a series of movable blades F″, operating as and for the purpose described.

Second, the mould wheel H, provided with the radial compartments H′, and revolving a fixed central cylinder I, substantially as set forth.

Third, the arrangement of plungers J and their described accessories or equivalents in combination with keys N and cross-heads N′, or their equivalent devices, for the purposes specified.

Fourth, the fingers S S′, or their equivalents, for shifting the movable blades of the feed wheel, in the manner described.

Fifth, the arrangement of exterior plungers O′ O″ O‴ for imparting an additional pressure to the clay, as set forth.

Sixth, the frame Q, braces *q*, side bars Q′ Q′, cross-head R, and their accessories, for operating their exterior plungers O′ O″ O‴, substantially as set forth.

Seventh, the arrangement of racks L′ L′, pinions Y′, spring catch Z′, shaft Y, and cam Y″, for the purpose described.

Eighth, the mould X, having a movable bottom X′, as described.

No. 52,675.—CHARLES CAMPBELL, Yellow Head, Ill.—*Hen's Nest.*—February 20, 1866.—This invention consists in providing a hen's nest with a pivoted or suspended door, counterpoised and arranged in such a manner that but one hen can enter and sit upon the nest at once. The object is to prevent hens laying eggs in the nests of setting hens, and also to prevent one hen from driving another off the nest.

Claim.—The wires or rods *i i′*, or their equivalents, attached to the pivoted bar *g*, provided with a weight or counterpoise B, and fitted in the box A, and all arranged to operate substantially in the manner as and for the purpose herein set forth.

No. 52,676.—E. H. CARPENTER, Dexter, Mich.—*Track Rope Hay Elevator and Carrier.*—February 20, 1866.—This invention consists in the employment of a tight rope track and of a hoisting and conveying rope in combination with a carriage of peculiar form. Each of the ropes is fitted with an adjustable stop, and the several parts of the carriage are arranged and operated in relation to each other and the ropes, so that, as the loaded fork ascends into the "mow," the elevating stop passes through a guard, and striking against two hinged seats, lifts them up so as to allow the stop to pass by, and the carriage passes along the rope to the proper locality, when it is tripped and unloaded.

Claim.—First, the use of the track and draught ropes A^1 A^2, combined with the stops S^1 S^2, as and for the purposes specified.

Second, the employment of said ropes and stops, in combination with a hay-elevating and conveying carriage, constructed, arranged, and operated substantially as herein described.

No. 52,677.—HENRY T. CARTER, Portland, Me.—*Valve Gear for Oscillating Engines.*—February 20, 1866.—This invention consists of a curved link with reference to the cylinder and valve stem of an oscillating engine, in such a manner that, by the combined effect of the link and the oscillation of the cylinder, the requisite reciprocating motion is imparted to the valve; this is effected by placing the link in the line of the axis of the cylinder and valve rod, and attaching it firmly to the framework of the engine, so that, as the cylinder oscillates, the curvature of the link causes the requisite motion to be imparted to the valve. Attached to the link is a lever by which the valve may be worked by hand, and also by a change of the position of which the motion of the engine may be reversed.

Claim.—First, the arrangement of the slotted link K, the valve stem I, and the oscillating cylinder A, all as and for the purposes specified.

Second, the manner of reversing an oscillating engine by means of the slotted link K, the valve stem I, the lever L, and the oscillating cylinder A, as specified.

No. 52,678.—GEORGE CLARK, Jr., Dorchester, Mass., and LEMUEL P. JENKS, Boston, Mass.—*Machine for Mixing Dough.*—February 20, 1866.—This invention consists of a fan, supported by a frame. To the upper part of said frame is hinged a cross-bar, through which passes a shaft, having an arm attached to its lower end. The shaft is provided with a crank, by means of which the said shaft may be made to revolve. The arm carries two revolving stirrers, and the scrapers which remove the dough from the stirrers. The stirrers are made to revolve by means of gear wheels.

Claim.—First, the arrangement of two vertical rollers rotating on their own centres, and at the same time rotating round the centre of the containing pan, substantially as and for the purpose described.

Second, the arrangement of rotating rollers, not touching the bottom of the pan and the removable pan, substantially as and for the purpose described.

Third, the arrangement of a rotating shaft or shafts removable from the dough-containing pan by means of the turning of the shaft bar which sustains them upon a hinge, substantially as and for the purpose described.

Fourth, the combination of a vertical rotating stirrer or stirrers with a scraper or scrapers to clean them, substantially as and for the purpose described.

Fifth, the arrangement of a vertical stirrer or stirrers when the same is or are removable from their respective shafts, substantially as and for the purpose described.

Sixth, the bent plate above mentioned to prevent the dough reaching the tops of the rollers, used substantially as and for the purpose described.

Seventh, the general combination and arrangement of the whole machine, substantially as and for the purpose described.

No. 52,679.—J. W. COCHRAN, New York, N. Y.—*Cartridge Retractor for Breech-loading Fire-arms.*—February 20, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—First, the spring *j*, in combination with the lever F and retracting tooth *i*, sub-

stantially as herein set forth, whereby it is made to serve as the connection between the said lever and tooth, and as the means of returning them to their proper places on the liberation of the lever after the retraction of a cartridge shell.

Second, the arrangement of the lever F and its connection with the retracting tooth, in relation to the breech receiver, stock and breech operating lever, substantially as herein specified.

No. 52,680.—COLUMBUS COLEMAN, Alleghany City, Penn.—*Horse Rake Teeth.*—February 20, 1866.—This device consists of a horizontal bed plate, elevated upon a block, upon which are two curved formers, one being stationary and the other simply pivoted at one end. Near the latter point there rises a vertical crank shaft, upon which and in contact with the bed plate is a projecting spur. The blank, of a proper length and heated, is passed through between the two formers until the end held by the tongs is brought even with the end of the spur, when the two are clamped together, and the crank shaft is then turned so as to bend the end of the blank into an annular form, after which the hinged former is moved around so as to force the blank up between it and the stationary former.

Claim.—The use of the header *e*, movable forms B and C, and lever D, when used in connection with the table A, constructed, arranged, and operating substantially in the manner herein described and for the purpose set forth.

No. 52,681.—SAMUEL COMFORT, Morrisville, Penn.—*Counting Machine.*—February 20, 1866.—This invention will be understood by reference to the claims and engravings.

Claim.—First, the combination of a registering bar L, or its equivalent, with the numbering wheels of a machine for indicating or printing numbers for the purpose of securing the correct alignment of the figures during a portion of the operation of the machine.

Second, the combination of the bar L with the bar N when arranged for joint operation, substantially in the manner described and for the purposes set forth.

Third, the combination of the notches *k* with the notch *k'*, when arranged in relation to the digital numbers on the numbering wheels, in the manner and for the purpose set forth.

Fourth, the combination of the bar N, having a projection *n*, with the numbering wheels K, having notches *k* and *k'*, differing in size, for the purpose described.

Fifth, the combination of the oscillating frame H, having a groove *l*, and flanges *m* and *m'*, with the crank pin *i*, substantially as described, for the purpose of giving the required intermittent oscillatory motion to the bar N.

Sixth, the combination of the crank C, the frame F, and the slotted bar E, and the spiral spring G, or their equivalents, with the oscillating frame H, when arranged to operate substantially as described, for the purpose of giving the longitudinally reciprocating motion to the bars L and N.

No. 52,682.—NORMAN COMSTOCK, Westfield, Ill.—*Self-operating Gate.*—February 20, 1866.—The gate is to be operated automatically by means of vehicles passing over the same, whereby the necessity of dismounting from vehicles to open or close the gate is avoided.

Claim.—The combination and arrangement of the gate B, arms C D E, catches *h*, and rods *j*, as and for the purpose specified.

No. 52,683.—JOHN L. CONSTABLE, New York, N. Y.—*Car Wheel.*—February 20, 1866.—This invention consists of a hollow axle, to each end of which are attached flanges. Within this hollow axle is another axle, to which the wheels are attached as usual, and revolving within the same. When operating upon railroad rails, the flanges prevent any lateral movement, and when the car is off the track, the weight falls upon the tread of the wheel, and the flange by reason of the play of the hollow axle is relieved from any strain or pressure.

Claim.—The combination of the wheels and independent flanges, substantially as described.

No. 52,684.—ANSON G. COOK, Burlington, Vt.—*Cupola or Blast Furnace.*—February 20, 1866.—This invention consists in laying three courses of common fire-brick, edgewise within the shell of a common cupola furnace, the bricks being laid with one end towards the centre of the furnace, and the other touching the shell. The tuyeres are then inserted, and two or more courses are laid as at first. A course is then laid to project into the furnace, leaving a space in the furnace, and also a space between said course and the shell. The next course is laid so as to approach nearer the shell; the remaining courses are laid with the bricks endwise, commencing at the course which is laid near the shell, and each successive course is laid one inch nearer the shell than the one next below, until the whole course is laid; after which the courses are laid touching the shell, until the furnace is finished. The tuyeres are provided with apertures through which nozzles may be inserted to regulate the quantity of air passing into the furnace.

Claim.—First, contracting the lining of the cupola from the inner surface of the hearth at a sufficient distance above the mouth of tuyeres to allow the coal or fuel to fill the space between the top of tuyeres and waist, which prevents the melted iron or metal from coming in contact with the blast of air, except as it passes through the burning coal, thereby wholly preventing the carbonization of one portion more than another, substantially as hereinbefore described.

Second, in combination with the waist the receding form and construction of the lining by offsets, which forms the brace for supporting the mass of fuel and metal, and prevents it from resting on the bed of fuel, for the purpose of using bituminous coal or coke, by allowing a free and even circulation of blast through every portion of the contained mass of fuel and metal, substantially for the reasons hereinbefore specified.

Third, the form of tuyeres, the manner of reducing the size of mouth of tuyere, for the treatment of very hard iron, the manner of applying or introducing the blast of air into the cupola, through tuyeres of the size and dimensions described, and the relative position of tuyeres to the waist, in combination as substantially hereinbefore specified.

Fourth, the mode of operating the cupola in combination with the other features of my invention, by which I melt the iron or metal by such a degree or heat as I desire, by using the the bed of coal or fuel of such depth as will produce, with all kinds of iron, such chemical results as I desire, substantially as hereinbefore described.

No. 52,685.—HENRY COOK, Bluffton, Ind., assignor to himself and JOHN H. WELCH, Fort Wayne, Ind.—*Stove-pipe Drum.*—February 20, 1866.—This invention consists of a series of chambers alternately open at the top and closed at bottom, so placed in the enlargement of a stove-pipe that products of combustion passing to the top of it, descend the first of the series, ascend the second and so on to the exit pipe in the centre. To the sides of the several cylinders are loops of sheet metal to press against the sides of the next layer to keep it in place.

Claim.—A stove drum having a series of cylinders, with loops and projections thereon, constructed, combined, and arranged substantially as herein specified, as a new article of manufacture.

No. 52,686.—RICHARD CROSS, Providence, R. I.—*Watch-key and Toggle Combined.*—February 20, 1866.—This invention is explained by the claim.

Claim.—A watch-key and toggle combined in such manner that the key shall be concealed within the toggle, substantially as specified.

No. 52,687.—RICHARD CROSS, Providence, R. I.—*Watch-key, Toothpick, and Toggle Combined.*—February 20, 1866.—This invention consists in combining together in one instrument a watch-key, a toothpick, and toggle.

Claim.—The combination of a watch-key, toggle, and toothpick, substantially as shown and described.

No. 52,688.—CHARLES CROSSLEY, Philadelphia, Penn.—*Mill Pick.*—February 20, 1866.—This invention consists of a wedge-shaped plate, and an upper flanged plate, having recesses into which drop or fit the lug of the bit, so that the greater the blows the greater will the parts become wedged, yet be readily detached, and either end of the bit be used until almost entirely worn out.

Claim.—The combination of the recessed plate A, with its flanges *a a'*, the wedge-plate C, secured to a handle X, and the bit B, with its lug *c*, the whole being constructed substantially as and for the purpose described.

No. 52,689.—W. H. CUTTER, St. Louis, Mo.—*Vice for Carpenters' Benches.*—February 20, 1866.—This invention consists of an upright post, in which the end of the screw is inserted loosely, and the bottom is attached to the sliding bar of the holding jaw, to which are attached two eyes, and to the sliding post are also two other eyes or hooks that can be adjusted from the eyes in the jaws; passing over pulleys in the leg of the bench, and then to the hooks on the post, is a chain or cord, which, when the screw operates the jaw, the chain tends to keep the post and jaw parallel with each other.

Claim.—A parallel vice for work benches, constructed and arranged substantially as above described.

No. 52,690.—JACOB DAVIS, Oaks, Wis.—*Corn Sheller.*—February 20, 1866.—This invention consists of a machine by which the corn is shelled from the cob, by rolling the ear between a pair of jaws, the corn passing down through the bottom of the sheller, and the cob being ejected at its top.

Claim.—A corn sheller formed by combining the jaws I and M, the bar G, and the spring E with each other, and with the box and frame in which they are placed, substantially as described and for the purpose set forth.

No. 52,691.—JOHN Q. DAVIS, Salem, N. J.—*Milk Can.*—February 20, 1866.—This invention consists in applying to the interior of a milk can a readily removable vessel, with a closely fitting stopper, secured in the can by a flange at the bottom, an annular band at the top, and springs to keep it in place. The vessel is filled with ice to keep the milk cool.

Claim.—The flange E, in the bottom of the can A B, and the annular band F in the mouth of the same, when they are used in combination with a removable ice vessel C D, provided with the catch springs *g g*, or their equivalents, the whole operating together, substantially as and for the purpose described.

No. 52,692.—THEODORE D. DAY, New York, N. Y.—*Skirt Wire.*—February 20, 1866.—In this invention fine wire is interwoven with the covering of the skirt wire, which is thus protected from abrasion and wear.

Claim.—Skirt wire or springs wrapped with a compound covering, composed of fine wire and strands of cotton or similar fibrous material, substantially as and for the purposes set forth.

No. 52,693.—WILLIAM DEVINES, Brooklyn, N. Y.—*Drug and Spice Sifter.*—February 20, 1866.—This invention consists of a shaft provided with elastic wings, with a sieve and hopper in combination with an apparatus for crushing lumps that may be in the material before it can reach the sieve.

Claim.—First, the combination of the blocks W and X with the sieve E, cap S and box, substantially as described and for the purpose set forth.

Second, the combination of the roller C′ with the plate D′, blocks E′, spring F′, and with the hopper, substantially as described and for the purpose set forth.

No. 52,694.—JOHN W. DIXON, Philadelphia, Penn.—*Apparatus for the Manufacture of Paper Pulp.*—February 20, 1866.—This invention consists in the employment of two boilers communicating with each other and with the heating coil by means of pipes. The boilers are provided with perforated diaphragms, the upper one of which has an opening in it, provided with a cover. The lower diaphragm has an opening covered by a valve. The boiler being charged with the proper materials, a solution of caustic alkali is applied to it, and the liquid is caused to circulate through the boiler and heating coil, until the contents of the boiler are properly digested. The boiler is then charged and supplied with a solution of caustic alkali, and the spent liquor used in the boiler is pumped into another boiler. The current of heated liquid is caused to circulate through the boiler, until its contents are properly digested.

Claim.—The combination of the two boilers A and B, the coil P P′, and the circulating pump, the tubes connecting them together, for the purpose of throwing the digesting liquid, while heated and under pressure, from one boiler to another, substantially as above described.

No. 52,695.—OMRI A. DODGE, Burlington, Vt.—*Furnace Door Regulator.*—February 20, 1866.—The object of this invention is to regulate the quantity of air to be admitted into furnaces for the purpose of regulating the consumption of fuel, and consequently the amount of heat generated. The invention consists in the arrangement of a pivot, opening, balls, pipe, with chains, and furnace doors.

Claim.—The arrangement of the pivot E, opening H, balls A and B, pipe C, with the chains F F, and furnace doors G K, whereby to automatically regulate the quantity of air admitted to the furnaces of steam generators, substantially in the manner and for the purpose as herein set forth.

No 52,696.—ALBERT C. EDDY, Providence, R. I.—*Elastic Mallet.*—February 20, 1866.—This invention consists of a mallet for adjusting the parts of machinery, and is made by forming a rubber body upon a metallic skeleton.

Claim.—An elastic mallet made entirely of vulcanized rubber, or of a metallic skeleton incased with rubber, the whole article being substantially as described.

No. 52,697.—DAVID EDWARDS, St. Anthony, Minn.—*Liniment.*—February 20, 1866.—This invention consists of a composition of turpentine, alcohol, gum camphor, oil of cedar, ammonia, oil of spike, and origanum.

Claim.—A liniment composed of the ingredients in the proportions herein described.

No. 52,698.—RUDOLPH EICKEMEYER, Yonkers, N. Y.—*Sewing Machine for Sewing in Sweat Linings of Hats, &c.*—February 20, 1866.—This invention is designed as an improvement on patent No. 25,078, of the same inventor, and consists in the construction and arrangement of the angular supporting and guiding plates, and means for operating the same. The guiding plates have a slight movement to and from the angle of the bed plate. The feed dog, also, in addition to its four motions, has a similar lateral oblique movement derived from an adjustable incline. This device is applied to the Wilcox & Gibbs machines.

Claim.—First, the angular guiding plate or pressing I, so applied in relation to and operating in combination with the angular supporting plate H, as to enable it to move toward and from the latter plate in a direction parallel or nearly so with a line bisecting the angle thereof, substantially as herein specified.

Second, the plate K′, for guiding and holding the sweat lining, and the pressing lever M, and spring L, in combination with each other and with the angular plates H and I, substantially as and for the purpose herein described.

Third, giving the feeding device, beside its forward and backward movement, a movement oblique to the needle and to the angle of the plates H I, and of the band of the hat, substantially as and for the purpose herein specified.

No. 52,699.—JOHN H. ELWARD, Polo, Ill.—*Method of Desulphurizing Coal for Welding Iron, &c.*—February 20, 1866.—This invention consists in sprinkling over the ignited coal a strong solution of nitre, or pulverized nitre. The coal may also be saturated with a solution of nitre before heating.

Claim.—The use of nitre, either crude or in solution, for desulphurizing mineral coal in blacksmiths' fires, substantially in the manner described.

No. 52,700.—ELIAS T. FORD, Stillwater, N. Y.—*Harvester Rake.*—February 20, 1866.—This invention consists in the construction and arrangement of certain bars located upon a central shaft, and connected with gears, in such a manner as to effect a contraction and expansion of the rake heads and moving the cut grain horizontally off the platform.

Claim.—The combination, as described, forming a contracting and expanding harvesting rake, the said combination consisting of the pivoted centres *d d*, links *m m*, rake arms *b b*, and rakes *v*, arranged on shaft *t*, and operated by bevel pinion E, on shaft I, and bevel gear D, in the manner as set forth and for the purpose specified.

No. 52,701.—ELIAS T. FORD, Stillwater, N. Y.—*Harvesting Machine.*—February 20, 1866.—This invention consists of a series of devices indicated in the claim, and does not admit of a brief description.

Claim.—First, the tube D, provided with end boxes *h v h v*, and seat sleeve W *i*, in combination with the arm L, left hound D *a*, arm V, with adjusting bar V F, catches Z, and cross-bar *m t*, of hounds D *a*, substantially as described.

Second, hinging the pole section B to the rear extension of the left and right hounds D *a* D *a*, formed upon and arranged in relation to the tube D, and main axle P Y, as seen in Fig. 1.

Third, the jack P *h*, as composed of lever P, flanges *i i*, hinge bolt *v*, guide J, arm *c*, shank X *e*, in combination with the caster standard X, and wheel T S, hinged upon the lower extremity of arm V, by the pivot or hinge bolt *v*, at the orifice V Q.

Fourth, the lever M, provided with the cavities *o s*, formed within the lever or arm M, for the reception of flange *i*, and the steel centre bar, and as connected to rear and front bar *n' n n*, in combination with the guide J, and lever K, for elevating and depressing the cutter bar pivoted upon the jack P *h* by the bolt *o t*.

Fifth, in combination with the arm L, supporting the pillow block L S, secured to the tube D, the arrangement of the hand lever T, pivoted below the multiplying shaft Y, to the pillow block L S, and provided with the slide Q, in the manner and for the purpose specified, substantially as set forth in the foregoing specification.

No. 52,702.—WILLIAM T. FRY, New York, N. Y.—*Pocket-book.*—February 20, 1866.—This invention consists in applying barbed prongs to the bands, and to the pocket-book a plate with a projection and openings to receive the prongs, whereby the band can be detached and replaced when it loses its elasticity.

Claim.—The elastic band B, with its barbed prongs or their equivalents, in combination with the plate G, secured to the pocket-book, and having a projection with an inclined opening, adapted to the reception of the said barbed prongs or their equivalents, all substantially as described.

No. 52,703.—C. W. GAGE, Homer, N. Y.—*Wagon Brake.*—February 20, 1866.—This invention consists in so arranging and connecting the brake of a wagon to and with the yoke pins on the outer end of the pole, that as the horses pull back upon the same the brakes are caused to bear upon the wheels; it also consists in a peculiar arrangement of parts, whereby the brakes are prevented from operating or bearing upon the wheels.

Claim.—First, connecting the yoke pins of the pole to and with the brakes by means of the connecting rod *r*, made in two or more sections, substantially as herein described, and for the purposes specified.

Second, in combination with the above the weighted lever arm *m'*, arranged and operating substantially as and for the purpose specified.

No. 52,704.—C. C. GALE, Columbus, Ohio.—*Railroad Station Indicators.*—February 20, 1866.—This invention consists in an arrangement of devices connected to a railroad car, whereby the name of stations will be presented and a signal given which can be viewed by all the passengers. A reversible disk allows the name to be exposed whether the train is on its going or returning trip.

Claim.—First, the arrangement of the reversible rotating disk B, spring stop D, and spring *g*, in combination with the cord *b*, lever H, pawl J, and ratchet F, arranged and operating substantially as and for the purpose set forth.

Second, the shaft C, nuts *c* and *c'* in combination with the ratchet F, lever H, arm I I', spring J, and stops *m n*, arranged and operating substantially as and for the purpose set forth.

No. 52,705.—W. T. GRANT, Jacksonville, Ill.—*Mop and Scourer.*—February 20, 1866.—This invention consists of a mop, mop wringer, and scrubbing brush combined.

Claim.—An implement consisting of a mop, a mop wringer, and scrubbing brush, constructed, combined, and operated substantially as herein specified.

No. 52,706.—William C. Grimes, Philadelphia, Penn.—*Grain Huller.*—February 20, 1866.—This invention consists in the use of a revolving cylinder, into which the grain is fed in charges. The cylinder, in its rapid revolutions, carries the grain by centrifugal force on the extreme of the inner surface of the cylinder, and in contact with adjustable hullers or ploughs, that cause the grain to be hulled.

Claim.—First, the mode, as herein described, of hulling corn or other grain by means of a fixed or adjustable plough acting upon it while held by centrifugal force to the interior surface of a spheroidal or other formed shell, as hereinbefore described.

Second, the combination of the revolving spheroidal or other formed shell A, with the adjustable plough E, for hulling corn or other grain, as hereinbefore specified and set forth.

Third, in combination, the shell A and the plates F F to act as semi-ploughs or gatherers, as hereinbefore described.

Fourth, the curved and movable tube H, in combination with the shell for discharging the hulled grain, hulls and meal from the shell, as hereinbefore described.

No. 52,707.—Elbert E. Groom, New York, N. Y.—*Steam and Cut-off Valve.*—February 20, 1866.—The object of this invention is the introduction of steam to the steam cylinder, and its exhaust therefrom by means of balanced piston valves, and to cut off the steam at any desired point of the stroke of the piston in the steam cylinder, and thereby use the steam more or less expansively. Its novelty consists in the use of cavities and of recesses in the piston valves adapted to operate in conjunction with the ports, a chamber in the steam-chest cover, in combination with the double-piston valves, and tappets suspended from an adjustable lever, the catches, a toothed rack, disk, and spring.

Claim.—First, the cavities *g* and the shallow recesses *g'* in the piston valves D, adapted to operate in conjunction with the ports *a a' b b'*, in the manner and for the purpose specified.

Second, the channel *h* in the steam-chest cover, in combination with the double piston valves D E, constructed and operating substantially as and for the purpose specified.

Third, the tappet *p* suspended from the adjustable lever *q*, in combination with the hinged latches *s s'*, toothed rack *k*, disk *l*, and spring *o*, or its equivalent, constructed and operating substantially as and for the purpose set forth.

No. 52,708.—J. F. Hall, Westerly, R. I.—*Hanging Centre Boards to Vessels.*—February 20, 1866.—This invention consists in combining a swivel yoke with a centre board so that the latter can be raised or lowered parallel to the keel, or that it can be lowered at one end only. A much greater surface can thus be brought into action than ordinarily.

Claim.—The swivel yoke C, in combination with the centre board of a vessel, substantially as and for the purpose described.

No. 52,709.—H. A. M. Harris, Philadelphia, Penn.—*Pump.*—February 20, 1866.—This invention consists of a vertical pump of double action, having a hollow piston rod and hollow piston, a foot valve, and a valve chamber below, and induction apertures above and beneath, and an intermediate disk valve having a deep annular groove on each side, and a flange exterior thereto.

Claim.—First, the described arrangement in the cylinder A of the lower inlet valve D, hollow piston rod B, hollow piston H, double acting valve C, annular valve E *e*, and openings *a*, the whole being applied and combined to operate in the manner set forth.

Second, the arrangement within the hollow piston H of the double-acting valve C, when said valve is fitted to the bore of the piston, and formed with annular recesses at its upper and under sides, as represented.

Third, the arrangement of the annular valve E, hollow piston rod B, head J, cap G, and openings *a* as and for the purpose set forth.

No. 52,710.—Jabez H. Harris, Point Isabel, Ohio.—*Railroad Alarm Signal.*—February 20, 1866.—A series of levers, rods, and chains are employed, as designated in the claim, for the purpose of giving warning at a railway crossing or station of an approaching train, both by the ringing of a bell and the elevation of a signal board with a suitable warning painted on it.

Claim.—First, the mode of automatically raising and releasing a signal board by means of an approaching train, substantially as set forth.

Second, the arrangement of compound levers C, bell cranks D and E, rods and chains F and G, triggers H and I, and spring L, for the automatic raising and lowering of the signal board K by the impact of the approaching train, in the manner substantially as described.

Third, the lever *n*, slotted lever *m*, in combination with the compound levers C, for the ringing of a bell O simultaneously with the elevation of the signal board K, as and for the purpose herein described.

No. 52,711.—Alexander Harroun, Jr., Onondaga, N. Y.—*Lamp.*—February 20, 1866.—This invention consists in the combination of a flame regulator, with a flat mica cap in the chimney.

Claim.—The regulator *a a*, in combination with the mica cap *b b*

No. 52,712.—W. H. HARTMAN, Fostoria, Ohio.—*Molasses Faucet.*—February 20, 1866.—This faucet is constructed with a straight tube to be screwed into the cask, having on its under side a cut-off or outlet. A trough-like scoop is inserted inside the main faucet, extending several inches beyond it into the molasses when drawing, and moved by a rod from the outer end of the faucet, the object of which is to facilitate drawing of thick liquids.

Claim.—The trough or spout B and head *d*, in combination with the barrel A and cut-off F, when arranged and operating as and for the purpose set forth.

No. 52,713.—WILLIAM G. HERMANCE, Albany, N. Y.—*Farm Gate.*—February 20, 1866.—In this device the gates are so constructed that they are susceptible of being partially opened or closed by moving them in a direction with their length, and also of being fully opened by swinging them in the arc of a circle, as in the movement of opening or closing a hinged gate.

Claim.—First, the construction of the roller D with flanged guards for the rail *a* of a gate, which operates substantially as described.

Second, the latch *e* and supporting catch *g*, said latch being formed on the rail of the gate so as to enter between the posts A A, and support the gate upon said catch, substantially as described.

Third, the combination of a swivelling roller D for sustaining the gate at one end, with a caster *h* for sustaining the opposite end of the gate, substantially as described.

No. 52,714.—D. H. HICKOK, Rockford, Ill.—*Shears for Cutting Bolts.*—February 20, 1866.—This invention consists in providing a shoulder on the end of each blade of the shears to prevent the bolts from slipping from between the blades of the shears when cutting them, and also to prevent the blades of the shears from cutting upon each other.

Claim.—The shoulders *a a* on the outer ends of the blades of the shears, for the purposes herein described.

No. 52,715.—WILLIAM S. HOWARTH, New Haven, Conn.—*Tool for Cutting Gas Pipes, &c.*—February 20, 1866.—This invention consists in making a tool with three revolving cutters, set in such a relative manner that two of the cutters are in the stationary part or body of the tool, and the adjustable cutter is held by a movable part or stock of wrought-iron, which is held by a screw.

Claim.—The use of the two fixed cutters *a* and *b*, in combination with the adjustable cutter *g*, when the whole is constructed and fitted for use, substantially as herein described and set forth.

No. 52,716.—DANIEL HUGHES, Rochester, N. Y.—*Quartz Crusher, &c.*—February 20, 1866.—This invention consists in placing the piston rod loosely in the rod of the stamper, so that the stamper may be readily turned by the action of the tappet.

Claim.—First, placing the ends of the piston rods *d* loosely into the sockets of the stamper rods D, substantially as and for the purpose set forth.

Second, the combination of the leather disks *f* with the rotary stamp rods D and loose piston rods *d*, as and for the purposes specified.

No. 52,717.—C. B. HUNTING, Clinton, Ill.—*Fence.*—February 20, 1866.—This invention consists in the combination of adjustable bands, stakes, rails, and battens in such a manner that the bands can be readily adjusted upon the stakes, and permit of the spreading or contraction of the same.

Claim.—The combination with the rails *a* and battens *b* of the stakes D E and adjustable iron bands *c'*, as and for the objects specified.

No. 52,718.—LIVERAS HULL, Charlestown, Mass.—*Machine for Weaving Coverings for Whip Handles.*—February 20, 1866.—In this machine the binding threads are in the nature of warps, but each pair is given a half twist at every passage of the helical thread between them.

Claim.—A mechanical combination composed not only of machinery for sustaining a whip stock or other article, and moving it lengthwise, and mechanism for winding one or more threads in a helix about the whip stock or article while being so moved, but also of mechanism for laying binding or connecting threads about the helix coils, the whole being substantially as hereinbefore described, and in combination therewith the mechanism for revolving the whip stocks so as to cause the binding or connecting threads to be laid in a helix therein set forth.

No. 52,719.—JOSEPH JONES, Newark, N. J.—*Carpenters' Shooting Boards.*—February 20, 1866.—This invention consists in attaching a jointed plane to a table, so as to reciprocate on ways, and at the same time is made adjustable to or from the edge or surface to be acted upon, and having also attached to the table a stop or holder that is adjustable to or from the plane, as well as at any angle.

Claim.—The shooting board constructed and arranged substantially as herein above specified, as an improved implement or tool

No. 52,720.—Edward F. Light, Worcester, Mass.—*Journal Box.*—February 20, 1866.—This invention consists in casting in the upper half of the box two oil cups, the bottoms of which communicate with chambers which partially surround the journal. These chambers are filled with some fibrous material. The centre of the lower half of the box is also cored out and filled with some fibrous material. There are also grooves in the lower half of the box to carry any surplus oil that may escape from the upper boxes to the chamber in the centre of the lower one. Both halves of the box are lined with Babbitt metal.

Claim.— A journal box or bearing composed of a base piece A cored out as seen at D, and having inclined grooves 1 1, in combination with a cap C having oil cups *a a*, chambers *b b*, and holes *c*, the parts being all constructed and arranged for joint operation as set forth.

No. 52,721.—Henry S. Lansdell, New York, N. Y.—*Pump for Railroad Stations.*—February 20, 1866.—This invention consists in the combination of a swivel head with the steam pipe, ascension pipe, swivel spout, and supporting globe.

Claim.— First, the swivel head *g*, in combination with the steam pipe *a* and ascension pipe *d*, constructed and operating substantially as and for the purpose set forth.

Second, the swivel spout *e*, in combination with the ascension pipe *d* and steam pipe *a*, constructed and operating substantially as and for the purpose described.

Third, the supporting globe *i*, in combination with the swivel spout *e*, ascension pipe *c*, and steam pipe *a*, constructed and operating substantially as and for the purpose set forth.

No. 52,722.—Sylvanus D. Locke, Janesville, Wis.—*Reel for Grain Binders.*—February 20, 1866.—This invention consists in making the reel that holds the binding wire in such a manner that it can be expanded or contracted by having its arms made adjustable, for the purpose of allowing the coil or bundle of wire as it comes from the manufacturer to be placed upon the reel and properly held without recoiling the same.

Claim.—First, an adjustable reel constructed with extensible arms, substantially as and for the purposes set forth.

Second, the combination of nut D and movable head or end E, with the adjustable arms *b*, and body of reel G.

No. 52,723.—Hugh Logan, Washoe City, Nevada.—*Sluice for Quartz Mills.*—February 20, 1866.—This invention consists of a series of sections connected together and placed on a suitable grade, each section having a series of longitudinal partitions dividing it into compartments; the compartments are provided with rounded, grooved false bottoms, the grooves communicating with the compartments. Water flows through the compartments, and the mercury and ore collect in the grooves and pass into the compartments.

Claim.—First, the grooved false bottoms *m* in the compartments *c* of the sections of the sluice, in combination with the longitudinal partitions *b* and pockets *d*, constructed and operating substantially as and for the purpose set forth.

Second, the triangular abutments *e f*, in combination with the compartments *c d* of the sluice, substantially as and for the purpose described.

Third, the yokes *g* with suitable wedges or keys, in combination with the longitudinal partitions *b* of the sluice, constructed and operating substantially as and for the purpose specified.

No. 52,724.—Alpheus Lowmiller, Jewett, Ohio.—*Harvester.*—February 20, 1866.—The sickle bar is made adjustable upon the finger bar in such manner that when the cutting apparatus becomes clogged or choked in operation, said sickle bar, by means of a lever under the control of the driver, can be withdrawn backward out of the fingers, and thereby relieved from the clogging matter, and then again thrust forward into the fingers for further operation.

Claim.—The arranging and applying of a sickle to a grain or grass harvester in the manner as herein shown and described, or in any equivalent way, so that the sickle may be moved forward or backward on the finger bar, substantially as and for the purpose set forth.

No. 52,725.—August Ludolff, New York, N. Y.—*Iron Frames for Piano-fortes.*—February 20, 1866.—The iron frame or plate of the piano-forte in this invention is constructed in such a manner as to dispense with the heavy wooden blocks, called the long and cross blocks, at present used in pianos.

Claim.—The arrangement of the plates A A′ A″ with flanges B and C on the under side, in combination with the rest planks L and L′ against the same, constructed substantially as described.

No. 52,726.—Abner B. Magoun, West Hanover, Mass.—*Window Screen.*—February 20, 1866.—Two frames having gauze stretched upon them are arranged with metallic slides, so that they can be placed in a window, and contracted or extended to suit the size of the window.

Claim.—An adjustable screen as made of two frames, their guides, and two separate coverings, arranged and combined substantially as and so as to operate as described.

No. 52,727.—MERRICK D. MARCY, Worcester, Mass.—*Bolt-heading Machine.*—February 20, 1866.—This invention consists in attaching to the sliding head which supports the bolt blank, a buttress into which the removable holding die is dropped, having the blank within it, where it remains during the operation of heading, after which it is removed by hand for the purpose of removing the finished bolt and inserting another blank.

Claim.—First, the slotted bolster or buttress attached to the sliding platform for holding the heading die, substantially as set forth.

Second, in combination with the above, the closed heading die, as shown, whereby it can be easily removed to disengage the finished bolt.

No. 52,728.—WILLIAM P. MARTIN, Salem, Mass.—*Machine for Rolling Leather.*—February 20, 1866.—This invention consists in the method of applying and working the hand or tool-stock, by attaching the same to a system of levers, in combination with a reciprocatory carriage driven from a crank motion.

Claim.—The employment of a reciprocatory carriage, in combination with the yielding bed, and a suitable mechanism for effecting the described motion of the hand or tool stock, substantially as set forth.

Also, the employment of the screw shaft *v*, in combination with the stationary stand *j*, and sliding adjusting bar *h*, the whole arranged to operate as set forth.

Also, the combination of the springs *p* and regulating nuts *o'*, with their screw rods, the whole arranged to operate with the bed, substantially as hereinbefore described.

No. 52,729.—W. C. MCGILL, Cincinnati, Ohio.—*Flour Sifter.*—February 20, 1866.—This invention consists of a conical rotating sieve with stationary wings, together with a rotating cover with a socket that fits on the shaft.

Claim.—The combination of the stationary case A, wings H, the revolving conical sieve G, socket cover I, and shaft F, substantially as and for the purpose specified.

No. 52,730.—JOHN S. MCMILLIN, Pittsburg, Penn.—*Mode of Working a Capstan by Steam.*—February 20, 1866.—This invention consists in an arrangement of shafting and gear for the purpose of connecting the capstan with the "little nigger engine," and for regulating the power and motion of the capstan.

Claim.—The arrangement of the wheels *l m n o k j i h e* and *d*, shafts 6 5 4 3 and B, capstan barrel *p*, heads *q* and *r*, and pins 2, the whole being constructed, arranged, and operating substantially as herein described and for the purpose set forth.

No. 52,731.—JOSEPH MCQUEAD, Mount Sterling, Ill.—*Wagon Brake.*—February 20, 1866.—This invention consists of a sliding brake connected, by means of links, to a shaft fitted in proper bearings. On the shaft are secured two eccentrics, and also at one end is an arm connected with a lever attached to one side of the wagon body, by moving which lever the brakes are operated.

Claim.—The sliding brake or shoe bar B connected to the shaft F by links E, or their equivalents, in combination with the eccentrics G G on said shaft, and the lever J connected with the shaft, and all arranged and applied to operate substantially as and for the purpose herein set forth.

No. 52,732.—FREDERICK MERKLE, New York, N. Y.—*Shoe.*—February 20, 1866.—This invention consists in having the back portion of the upper crimped and formed out of one piece of leather.

Claim.—As a new article of manufacture a leather shoe having its upper crimped and formed of a single piece at the rear, as hereinbefore specified.

No. 52,733.—JAMES M. MESCHUTT, New York, N. Y.—*Washing Machine.*—February 20, 1866; antedated February 9, 1866.—This invention consists of a beater and crank shaft that lifts the clothes and presses them against a sliding washboard that yields to the necessary pressure in the operation, when the clothes are dropped and taken up again until clean.

Claim.—In combination with the box B constructed as shown, the use or employment of the sliding washboard K and beater G, when the same shall be constructed and operated substantially as shown, for the purposes herein fully described.

No. 52,734.—ISAAC M. MILBANK, Greenfield Hill, Conn.—*Breech-loading Fire-arm.*—February 20, 1866.—In this invention a pivoted breech block, swinging upward and forward. is secured in place by a bolt extending downward and slightly backward through it, and operated by a small lever. The breech block is provided with a spring hook or catch of peculiar form for withdrawing the cartridge shell, on being opened.

Claim.—First, in combination with the swinging breech pin *f* and bolt *g* fitted as specified, the lever *h* jointed to the upper end of the bolt *g*, and acting to withdraw the same, as specified.

Second, the swinging spring claw *n*, in combination with the swinging breech block *f*, substantially as and for the purposes set forth.

No. 52,735.—ALLEN MOON, Bethlehem, Ind.—*Fireplace.*—February 20, 1866.—In this invention the grate is movable, and also the back plate which rests at one end in the grate, and at the other end in a regulator in the chimney, and so arranged that the grate space can be enlarged or diminished by pushing it forward or pulling it back. In the chimney is a throat valve, and in front of the fireplace a screen slides up and down. When the wood is burned the grate is taken out of the fireplace.

Claim.—The movable grate 9′, the movable extra back 10, the regulator with its throat valve 7, and the sliding front with its pulleys, all operating substantially as set forth and described, for the purpose aforesaid.

No. 52,736.—WILLIAM L. NEWELL and JACOB S. SIMMERMAN, Millville, N. J.—*Car Coupling.*—February 20, 1866.—This invention consists of a number of levers applied to railway cars and to the coupling, so as to insure the connection of one car to another.

Claim.—First, the inclined and hooked arms B B, combined with the springs E E, or their equivalents, the whole being constructed and applied to the cars, substantially as and for the purpose specified.

Second, the combination of the inclined and hooked arms B B with the interlocking levers F F, the whole being constructed, applied to the cars, and operating substantially as and for the purpose herein set forth.

Third, the combination of the above with the levers D D, the whole being arranged and operating substantially as described.

No. 52,737.—ISAAC NEWHALL, Lynn, Mass.—*Inner Sole.*—February 20, 1866.—This invention consists in an inner sole formed of leather scraps or fillings, coated or covered with paper or similar material.

Claim.—An inner sole for boots and shoes, formed of leather scraps or fillings, coated or covered either upon one or both of its sides with a covering of paper or other similar material, substantially as herein described.

No. 52,738.—S. W. NORTON, Lemont, Ill.—*Hot Air Furnace.*—February 20, 1866.—This invention consists of a sleeve so arranged with regard to the feed spout of a furnace as to be susceptible of being raised or lowered by means of a chain attached to it and to a shaft.

Claim.—The sleeve E, so arranged with regard to the feed spout D of the furnace, and the air blast forced through and across the same, as to be susceptible of being raised or lowered, substantially in the manner described and for the purpose specified.

No. 52,739.—EMILE NOUGARET, Newark, N. J.—*Apparatus for Pouncing Hats.*—February 20, 1866.—In this invention the brim of the hat is passed between two conical rollers by the revolving thereof, and is thus drawn between two spring jaws, the faces of which are covered with emery. To pounce the body, it is fixed upon a horizontal block which revolves with it, and the emery is applied by means of a bar, pivoted in such a manner as to enable the operator to apply the cutting surface to any desired part of the hat.

Claim.—First, the pressing cones C C′, in combination with the punching jaws D D′ and guide piece *f*, constructed and operating substantially as and for the purpose described.

Second, the swivel bar *i*, covered with sandpaper or other suitable material, and applied in combination with the revolving block E, substantially as and for the purpose set forth.

No. 52,740.—ROBERT ONDERDONK, New York, N. Y.—*Apple Corer and Slicer.*—February 20, 1866.—This invention consists of a series of slicing cutters, arranged so as to form the half of a hollow sphere, with a tubular coring cutter at the lower end in connection with a semi-spherical plunger, to force the apple through the cutting device.

Claim.—First, the arranging of the slicing cutters *b* so as to form a hollow semi-spherical socket to receive and hold the apple while being cut, and to obtain a drawing or oblique cut, substantially as set forth.

Second, the combination of the coring cutter E, slicing cutters *b*, semi-spherical plunger G, lever F, arranged to operate in the manner and for the purpose herein specified.

No. 52,741.—WM. PINKERMAN, Bridgeport, Conn.—*Detachable Rocker for Chairs.*—February 20, 1866; antedated February 16, 1866.—This invention consists in the construction and arrangement of adjustable sockets to the rockers of chairs, to receive the lower ends of the legs of the chairs, and to be detachable from them when required.

Claim.—The adjustable socket for the rockers of rocking chairs, constructed and arranged substantially as herein described and for the purpose set forth.

No. 52,742.—GEORGE S. PRINDLE, Aurora, Ill.—*Piston-rod Packing.*—February 20, 1866.—This invention consists in providing two hollow cones, which are attached to the stuffing box at their bases, and have slots cut in them from their smallest ends to near their bases or points of attachment to the stuffing boxes. The cones are so arranged that the slots in either one are covered by the solid portion of the other, thus preventing the leakage of steam past the front where they bear upon the rod. The rod is made to fit steam-tight against

the cylinder head, and a recess is left therein to act upon the slotted cones, while steam is admitted to such recess through apertures formed in the cylinder head.

Claim.—Constructing stuffing box packing of hollow, divided or slotted cones, as herein set forth, so that the steam or other pressure shall close the packing cones around the rod, making a tight joint while allowing the rod to move freely, and shall open and relieve the rod from friction when the steam or other pressure is removed.

No. 52,743.—GEORGE W. PRUGH and WILLIAM H. BEARD, Armington, Ill.—*Cultivator.*—February 20, 1866.—This invention consists in the combination of ploughs, with their beams and standards, in such a manner that they are readily operated by means of levers and pulleys, both laterally and vertically, as desired.

Claim.—First, combining and uniting in one machine the shaft J, fitted with a lever and pulley, and connected to the cultivator beams N N and S S for the purpose of raising and lowering them, and the bell cranks P P and stirrups *t t*, connected to the top of the two inside cultivator staffs V V, for the purpose of moving them laterally, substantially as decribed.

Second, connecting and arranging the cultivator beams N S and N S′, in relation to each other, substantially as set forth

Third, the adjustable connection between the front ends of the cultivator beams N N′ and the hangers E E, when said hangers and beams are arranged in respect to each other and to the cross-tie Z and the main frame A B C, substantially as set forth.

No. 52,744.—ANTONIO QUIROLO, New York, N. Y.—*Stereoscope.*—February 20, 1866.—This invention will be understood by reference to the claims and engravings.

Claim.—First, hinging the lens-holder to the bed plate of a stereoscopic instrument, in combination with a diaphragm F hinged to the said bed plate, the two being arranged together so as to be operated and adjusted substantially in the manner described.

Second, in combination with the above, the adjustable picture holder L arranged upon the bed plate, as and for the purpose specified.

No. 52,745.—ANDREW RANKIN, Philadelphia, Penn.—*Manacles.*—February 20, 1866.—This invention is designed as an improvement upon a patent granted to A. Delestatus, assignor to A. Rankin, December 10, 1861, and it consists in the use of two pieces of metal hinged together, the upper portion of which is curved so as to fit the wrist, and the lower portion is straight except at a point near its outer end, where it is slightly bent.

Claim.—First, a manacle composed of the portions *c* and *c′*, constructed and combined substantially as, and for the purpose specified.

Second, the piece C′, curved or bent at the point D, and combined with the portion C, as describedl.

No. 52,746.—HENRY F. READ, Brooklyn. N. Y.—*Flour Sifter.*—February 20, 1866.—This invention consists of a box in which a hopper is placed, emptying into a sieve, which is susceptible of an oscillating motion. The lower edges of the hopper, which rub against the sieve, have a packing of leather, and a partition extends across the sieve to prevent the flour from moving with the sieve.

Claim.—First, the combination of the box, hopper, and oscillating sieve.

Second, the packing *f f* at the lower edges of the hopper, in combination with said hopper and the oscillating sieve.

Third, the stationary partition *g* in the hopper, in combination with said hopper and oscillating sieve.

No. 52,747.—F. W. RITTERHOFF, New York, N. Y.—*Tobacco Cutting Machine.*—February 20, 1866.—This invention consists in a device for taking up the wear of the shaft containing the fly-wheel and cutting knife attached, so as to have at all times an even, unvarying, and constant cut; also, in an arrangement of parts, for the purpose of removing and detaching the followers from the box containing the tobacco, in a simple and quick manner, and at the same time without removing entirely the follower of the tobacco box, and the connecting parts of the follower, from said box.

Claim.—First, a device for taking up the wear of the shaft, operating substantially as and for the purpose herein shown and described.

Second, the combination and arrangement of the follower with the hand wheel and screw, arch piece and cheeks of the tobacco box, operating substantially as and for the purpose herein shown and described.

No. 52,748.—THOS. C. ROCHE, Williamsburg, N. Y.—*Developing Stick.*—February 20, 1866.—This device is provided at one end with a suction pad of India-rubber, or other suitable material, in such a manner that, by the application of the suction pad, a plate of glass or other material can be conveniently raised and held in the proper position for applying the developing solution, and all necessity of handling the plate and soiling the fingers is avoided. The stick is also provided with a guard at about the middle of its length or at a convenient

distance from the end carrying the pad, in such a manner that the hand of the operator is protected against the liquid that may run down on the stick.

Claim.—First, a developing stick composed of a handle A and suction pad B, as a new article of manufacture.

Second, the guard C, in combination with the stick A and pad B, substantially as and for the purpose set forth.

No. 52,749.—ISRAEL M. ROSE, New York, N. Y.—*Guide for Folding and Uniting the Edges of Two Pieces of Cloth.*—February 20, 1866.—To the bottom plate is attached a curved plate by means of a screw, to which curved plate is secured a bent piece of metal, which serves to hold the pieces D and E in their relative positions. The said pieces consist of plates of a twisted spiral form combined together so as to receive and hold the cloth for sewing. The said spiral plates are regulated by means of a steel spring, to conform to the thickness of the cloth to be sewed.

Claim.—The employment of the spiral-shaped pieces B and D and E, in combination with the spring piece C, separately constructed, the whole united with the bed plate A, in the manner substantially as and for the purposes herein described and set forth.

No. 52,750.—A. H. ROWE, Hartford, Conn.—*Door Latch.*—February 20, 1866; antedated September 2, 1865.—This invention relates to a door latch, the bolt of which is placed in an upwardly inclined position, and has its point curved so that when the door is slammed or closed, without raising the latch, the point of the bolt, in coming in contact with the cap, rises spontaneously, and as soon as the door is fully closed, drops down by its inherent gravity, and is caught behind the cap, thus dispensing with the use of springs.

Claim.—As a new article of manufacture, the latch constructed as described.

No. 52,751.—TYLER SABBATON, New York, N. Y.—*Apparatus for the Manufacture of Illuminating Gas.*—February 20, 1866.—The first part of the invention consists in the combination of several distillatory retorts with a regenerating retort, in which the gases evolved from the first retort are mixed and more thoroughly decomposed before passing through to the hydraulic main. The second part consists in uniting several retorts of a bench, so as to pass into the main by a single pipe closed with a cup seal. The third part of the invention consists in combining a double superheating retort for steam with the other retorts.

Claim.—The combination in a gas apparatus of several distillatory retorts with one regenerating retort, substantially as set forth.

Also, the combination of several retorts of a bench with the hydraulic main, by means of one dip pipe fitted with a cup seal, substantially as set forth.

Also, the combination of the retorts of a bench with a double-chambered superheating retort by pipes in such manner that the steam to be superheated passes through both chambers of the superheating retort before it passes to a distillatory or decomposing retort, substantially as set forth.

No. 52,752.—ABSALOM SAEGER, Meadville, Penn.—*Wool Packer.*—February 20, 1866.—This invention consists in attaching the sack to a tube, so that when a receiving tube is filled and raised to one end of the sack, a plunger will draw the wool into the bag and return to its first position ready for another supply.

Claim.—The tubes A and E, in combination with the racks G G and the levers F F, with the follower X K and the roller H, operated by the wheel C and the crank M, when the same are constructed as described, and in the aforesaid combination and for the purposes set forth.

No. 52,753.—C. W. SANOR, Hanoverton, Ohio, and JACOB STOFFER, New Chambersburg, Ohio.—*Horse Power.*—February 20, 1866.—This invention relates to a combination of wheels and shafts as indicated in the claim, for the purpose of gaining greater leverage and velocity without much loss by friction.

Claim.—First, the arrangement of the crown wheel E, master wheel B and shaft F, in combination with the shafts *a'* and E, and pinions *a g h*, operating in the manner and for the purpose substantially as described.

Second, the shaft E having its upper journal within and operating conjointly with the shaft F, in combination with the disk D' and shaft I loose within said disk, arranged and operating conjointly as and for the purpose substantially as set forth.

Third, the gear wheel L and pinions H, in combination with the disk D', shaft I, and bevel pinions *m n*, arranged and operating conjointly, as and for the purpose substantially as specified.

No. 52,754.—JOHN SAVILL, Monmouth, Ill.—*Cultivator.*—February 20, 1866.—This invention consists in the construction of the several parts whereby the plough beams may be adjusted with the greatest facility, and a proper weight kept upon the neck yoke at all times.

Claim.—First, the bent axle A, provided with arms *a a*, in combination with the brackets C C, containing the wheels D and fitted on the arms *a*, substantially as and for the purpose set forth.

Second, connecting the front ends of the plough beams E E to the upper ends of the brackets C C, by pivot bolts *b*, arranged with circle plates *c*, substantially as and for the purpose specified.

Third, the evener or draught regulator, composed of the splinter bars I I K, connected by the rods J, and arranged substantially as described.

No. 52,755.—AUGUSTUS SCARLETT, Newark, N. J.—*Bottle Stopper.*—February 20, 1866.—This invention consists of a stopper, through which pass two tubes—one being larger than the other. To the top of the smaller tube is attached a pan, which passes around the larger tube, so as to collect the drippings from said tube and return them to the bottle through the smaller tube.

Claim.—Making use of the tube by which air is supplied to the vessel for the additional purpose of conveying the drippings back into the vessel.

No. 52,756.—GEORGE W. SCOLLAY, Washington, D. C.—*Burial Case.*—February 20, 1866.—This invention will be understood by reference to the claims.

Claim.—First, in combination with the coffin and a plastic cement, the metallic lining applied thereto for the purpose specified.

Second, in combination with the coffin a metallic sheet lining made to cover the bottom of the coffin and only a portion of the sides and ends thereof and applied thereto, so as to form a tight joint at the junction of the edge of the lining and the inside of the coffin, thus preventing the fluids or gases from passing down between the lining and the coffin.

No. 52,757.—WILLIAM H. SEYMOUR, Liverpool, N. Y.—*Clamp for Stages.*—February 20, 1866.—The object of this invention is to secure a scaffold to a roof in shingling by means of a clamp. This clamp consists of two jaws operated by two levers, one of which contains a thumb-screw, which secures the jaws in their place, and the other contains two spurs, which secure the clamp in its place on the roof. The clamp is to be secured by the jaws to the shingles already fastened, and the spurs hold the clamp in its place. The scaffold is to be placed on the clamps, resting against the thumb-screws.

Claim —The arrangement of the parts *a b c d e g* and *f*, substantially as above described, constructed and made to operate substantially as and for the purpose herein shown and described.

No. 52,758.—HALCYON SKINNER, Yonkers, N. Y.—*Apparatus for Teaching Spelling.*—February 20, 1866.—In this invention a series of wheels or their rollers, having upon their peripheries the letters of the alphabet, are mounted side by side upon a horizontal shaft and fixed in a box or case, having an opening in front, through which may be seen one letter upon each wheel; the wheels being arranged not quite rigidly upon the shaft, and each provided with a stop, so that they may be rotated singly or together, and any required letter may thus be brought to view.

Claim.—First, holding the wheels *b b* stationary when required, by means of the pins *g g* and catches *f f*, and releasing them in any required number by the keys *h h*, or all together by the key *j* and rocking bar *k*, substantially as described and for the purpose set forth.

Second, in combination with the other parts described, mounting a series of pictures upon one or more rollers, substantially as specified.

No. 52,759.—A. J. SMITH and G. S. HUDSON, Ellisburg, N. Y.—*Farm Gate.*—February 20, 1866.—This invention consists in the arrangement of a swinging bar, and a guide within which the bar moves, with the gate separators and posts, whereby an easy and free movement is given to the gate, and the same prevented from clogging with ice, &c.

Claim.—First, the combination of the swinging bar E and guide F with the rails C and G and with the post B, in a farm or entrance gate, substantially as described and for the purpose set forth.

Second, the combination of the separators I with the pickets H and rails C and G, in a farm or entrance gate, substantially as described and for the purpose set forth.

No. 52,760.—WILLIAM C. SMITH, Lafargeville, N. Y.—*Medical Compound.*—February 20, 1866.—This invention consists of a composition of brandy, barberry, myrrh, capsicum, kino, camphor, sugar, and opium.

Claim.—A medical compound, made as herein set forth, for the purposes set forth.

No. 52,761.—W. W. SMITH, Cincinnati, Ohio.—*Telegraph Insulator.*—February 20, 1866.—This invention will be understood by reference to the claim.

Claim.—Forming the insulating block with the reflexed, convoluted, or meandering chamber H, which encloses, without touching, the metallic stem or shank of hook, substantially as and for the object set forth.

No. 52,762.—HENRY SOGGS, Columbus, Penn.—*Water Wheel.*—February 20, 1866.—In this invention, between the steps of a horizontal wheel and the lower part of said wheel, are arranged two small vertical wheels with suitable gearing, which wheels are operated on

their axes by the water wheel which has already operated the horizontal wheel, and thus aids in revolving the shaft of the main wheel, to the top of which the millstones are attached, the nether stone being elevated and depressed by means of a system of wedges operated by the movement of arms, in grooved ways, on a cylinder. A circular gate over the main wheel, at the bottom of the penstock, is divisible centrally, and is thus opened and closed by a system of arms operated by a crank rod reaching from the top of said penstock.

Claim.—First, the combination and arrangement of the screw wheel C and over-shot wheels D D′, including the gearing thereof, with the shaft B, so as to admit of a double use of the water, substantially as described.

Second, the combination of the wedges H H′ with the jaws J and cap G, for the purpose of raising and lowering the millstone, substantially as set forth.

Third, the adjustable gate, composed of the half circles L L′, and operated by the shaft S and arrangement of levers, substantially as described.

No. 52,763.—NATHAN H. SPAFFORD, Baltimore, Md.—*Machine for Separating Bristles.*—February 20, 1866.—In this invention the external structure of the bristle, which, like hair and wool, has small lateral projections or beards inclining from the root towards the tip, has in this machine made use of a peculiar conformation to divide a disordered mass of bristles into two parcels, so that all the butts of each parcel shall be brought together and point the same way. The mass passes between a cylindrical endless belt and a bed of endless flat belts, and during its passage forward, a lateral motion of a cylindrical belt causes it to rub closely upon the beards of the bristle and so crowd them out from the central belt to both sides of the machine.

Claim.—First, the grooved pulleys S S, and the round belt thereon, constructed and operated substantially as and for the purposes specified.

Second, the endless travelling platform W, with the anti-friction rollers thereon on the inside, and the small guiding strips on the outside, combined with the large pulley R and the drums *a a*, substantially as and for the purpose set forth.

Third, the three belts Y Y Y, in combination with the travelling platform W and rollers *a a*, when constructed and operated substantially as and for the purpose herein specified.

Fourth, the shaft E and worm gear thereon, in combination with the cog wheels D D and pulleys C C and F, substantially as and for the purpose set forth.

Fifth, the arms I I, oscillating shaft V, with the small rollers on the under side thereof, the boxes O O, nuts *n n*, and the set screws connected therewith, combined and arranged substantially as and for the purpose described.

Sixth, the variable boxes *u u*, combined with the shafts P and T, and the pivot boxes *z z* and set screws thereto, substantially as and for the purpose set forth.

Seventh, the entire machine, with its described devices, constructed and operated substantially as and for the purposes specified.

No. 52,764.—VINCENT SQUARZA, San Francisco, Cal.—*Machine for Extracting Essential Oils.*—February 20, 1866.—This machine is composed of a box with a revolving frame inside; on this frame are a series of channels with their bottoms covered with sharp points. The fruit passes down this channel and the skin is pierced by the points; the alcohol or other liquid for extracting the oil is placed in the vessel; the channels are so arranged that the fruit rolls from end to end as the frame revolves.

Claim.—The compartments C D E F, having one or more perforated fixed covers L, adjustable cover K, with points *t t*, or their equivalents, arranged as herein described and for the purpose set forth.

No. 52,765.—CHARLES W. STAFFORD, New York, N. Y.—*Quartz Crusher.*—February 20, 1866.—This invention consists of a reciprocating grinding roller, with a concave segmental floor, upon which it reciprocates, together with a vibrating lever and converging jaws, one of which reciprocates.

Claim.—First, the reciprocating roller H, in combination with the segmental surface or floor I, substantially as and for the purpose set forth.

Second, the combination of the vibrating lever C^2, jaws B B′ C C′, and roller H, as and for the objects specified.

No. 52,766.—N. P. STEVENS, Lowell, Mass.—*Link Motion for Steam Engines.*—February 20, 1866.—The object of this invention is to prevent the slipping or jumping motion upon the block attached to the wrist pin of the rocker shaft at its point of greatest throw. The lifting arm, which controls the link as to its position with reference to the point at which it is cutting off the steam from the cylinder, has attached to it a short lever pivoted at its centre to the lifting arm in such a way that it is forced to turn upon its axis. To the outer ends of this short lever are pivoted two lifting links which extend up to the centre of each side bar of the main link, to which they are pivoted in such a manner that, as the link varies its position, the rear end of the short or rocking arm works in a corresponding ratio, thus allowing the link to be moved by the eccentric through its arc of a circle without causing any perpendicular motion thereof.

Claim.—The arrangement and combination of the rocker I, the two legs K H, with the link A and the lifter H thereof, the whole being constructed substantially in the manner and so as to operate as specified.

No. 52,767.—J. SEVERANCE STEWART, Homer, N. Y.—*Churn.*—February 20, 1866.—The shaft in this machine is provided with bevel gear wheels, and formed in the shape of a crank, between the two bevel gear wheels. To the crank is secured a pitman, at the lower end of which is attached a disk, provided with a valve. This disk fits within a tube and serves to force air into the churn.

Claim.—The arrangement of the shaft L, wheels K and J and I and H, pitman M, with the tube D, and revolving churn, provided with dashers, the several parts being constructed and used as and for the purpose herein set forth.

No. 52,768.—MATHEW STEWART, Philadelphia, Penn.—*Lamp Shade.*—February 20, 1866.—This invention consists of a shade with horizontal sides fitted up for the reception of transparencies or pictures, sustaining a conical reflector.

Claim.—First, a circular shade, having the vertical sides B consisting of the two grooved rims b^1 b^2, and a picture-holding frame b^5 between them, the same being constructed and arranged substantially as and for the purposes described.

Second, in combination with the said vertical sides B, bending the ends of the arms C into the vertical positions shown, together with their respective shoulders c' and screw nuts c^2, as and for the purpose described.

Third, making the picture or transparency-holding frame b^5 in one entire piece, and irrespective of the number or form of its openings for receiving or holding the said pictures or transparencies.

Fourth, in combination with the said vertical sides B of the shade, the detached reflector A, the same being supported by simply resting on the upper rim b^1, as and for the purpose specified.

No. 52,769.—F. R. STOCKTON, New York, N. Y.—*Graver.*—February 20, 1866.—This invention consists in combining two blades with a handle and screw, so that both sides of a line can be cut at the same time; said blades being capable of adjustment closer or farther apart.

Claim.—A graver, formed by combining two blades B and C with each other and with the handle A; the distance apart of the points of the blades being regulated by the screw D; the whole being constructed substantially as described and for the purpose set forth.

No. 52,770.—D. C. TELLER, Terre Haute, Ind.—*Cultivator.*—February 20, 1866.—This invention consists in combining with vibrating plough beams, spring bars and curved plough standards, in such a manner that when the ploughs come in contact with any obstacle they will yield and bound over such obstructions, and again adjust themselves.

Claim.—The arrangement of the vibrating beams R, in combination with the spring sliding draw bars F and crooked arms *m* with the stop O, substantially as specified for the purpose set forth.

No. 52,771.—ARTEMAS E. THOMPSON, Brooklyn, N. Y.—*Operating the Swell of Reed Organs.*—February 20, 1866.—This invention consists in substituting a movable pedal board for the ordinary stationary board, and combining therewith a series of levers, shafts, and rods communicating motion to the pedal board, so that the player can open and shut the swell at pleasure, gradually and suddenly, without removing the feet from the pedal.

Claim.—The combination of the pedals with the oscillating lever board A, arranged substantially as shown and described for the purpose set forth.

No. 52,772.—JOHN S. THOMPSON, Glenn's Falls, N. Y.—*Barrel-head Machine.*—February 20, 1866.—This invention consists of a revolving clamp to hold the blank head, which, while it revolves, is presented, by oscillating it, to a convex circular saw on an adjustable table, which can be adjusted to cut heads of different diameters.

Claim.—The circular dish-shaped saw E and cutter head F provided with cutters *a*, in combination with a rotary clamp I fitted to a swinging yoke H, substantially as and for the purpose herein set forth.

Also, having the bar B, to which the supports or bearing C of the saw arbor D are attached, arranged so as to be capable of being adjusted longitudinally, in combination with the adjustable yoke H, in which the clamp I is fitted, all being arranged substantially as shown and described, for the purpose of adapting the machine to cut heads of different sizes or diameter.

No. 52,773.—HENRY C. THRALL, Springfield, Mass.—*Wind Wheel.*—February 20, 1866.—The wheel is regulated by a governor, the ascent and descent of the arms of which engage and disengage the inner extremities of the wings, which latter are pivoted at their centres at the outer extremities of arms radiating from the main vertical shaft. When used as a water wheel the governor is arranged above the wheel.

Claim.—First, the combination of one or more wings *b* with one or more arms *a*, piece F, and shaft B, when arranged substantially in the manner and for the purpose herein set forth

Second, in combination with the combination named in the first clause of this claim, the regulator or governor D, when arranged substantially in the manner and for the purpose herein set forth.

No 52,774.—R. W. Van Peyma, Lancaster, Penn.—*Grain Huller.*—February 20, 1866.—The object of this invention is to clean off the outer hull from grain, and it consists in wide grooves cut in the face of the stones and tapering in a curved line toward the centre of the stone A corrugated surface on the periphery of the runner at right angles with the face of the stone is combined with a metal case or curb perforated from the outside, so that it forms conical corrugations on the inside, so that the grain is forced by the corrugation in the stone against the curb, and the hull worn off by rubbing against the conical corrugations.

Claim —First, a stone with the periphery corrugated at right angles with the plane of the stone and grooves *o o*, for the purposes substantially as set forth.

Second, the stone, as described, in combination with the curb C and hooks, bolts *a a*, substantially as and for the purposes described.

No. 52,775.—R. E. Washburn, San Francisco, Cal.—*Sluice Box.*—February 20, 1866.—This invention consists of a flume leading to a chute, which has bars bevelled and sunk into said chute, the upper ends of which are attached to the flume. Below said bars is a chute, which directs the water falling on it into the mercury box, and between said mercury box and flume is a series of riffles, which catch any amalgam that may be carried out of the box.

Claim.—First, the adjustable amalgam box D, quicksilver vat E, riffles H H H, or their equivalents, substantially as described and for the purpose set forth.

Second, the peculiar shaped tapering grating or bars B B, arranged as described, for the purpose of allowing the coarser material to pass off without choking, substantially as set forth.

Third, the manner of introducing the water so that it may pass through the amalgam box D, dividing it by means of the chutes C and G, the coarser passing down the chute G, while the finer material and water pass down G, uniting again at F, so that the box can be used in any part of the flume, substantially as described and for the purposes set forth.

No. 52,776.—A. Williams, Wellsville, Ohio.—*Countersink.*—February 20, 1866.—This invention consists in the arrangement of a hollow countersink upon a threaded shank, which is screwed into the hole to be reamed out, and which has on its outer end a nut that forces the countersink down to the work.

Claim.—The burr A, stem B, provided with a screw at each end, in combination with the nut C, arranged and operating conjointly as and for the purpose set forth.

No. 52,777.—D. D. Winant, Brooklyn, N. Y.—*Derrick.*—February 20, 1866.—This invention consists in an arrangement of grooved barrels and gearing, in combination with a clutch, by means of which the speed of the barrels relatively to the power can be varied for raising weights.

Claim —First, the arrangement of the grooved barrels *e f* and gear wheels *g h i k l* and *m*, in combination with the shaft *n* and clutch *n'*, for the purposes and substantially as specified.

Second, in combination with the barrels *e f* and gear wheels *g h i k l* and *m*, shaft *n*, and clutch *n'*, the friction reel or reels fitted in the manner and for the purposes specified.

No. 52,778.—John W. Woodring, Greensburg, Ky.—*Liniment.*—February 20, 1866.—This invention consists of a composition of spirits of turpentine, oil of worm seed, oil of spike, olive oil, tincture of opium, castile soap, gum camphor, tincture of capsicum, and alcohol.

Claim.—The medicine aforesaid composed of the constituent parts and prepared as aforesaid.

No. 52,779.—Joseph Woodward, Springfield, Mass.—*Prepared Paste for Bookbinders, &c.*—February 20, 1866.—This invention consists of a composition of flour, common salt, alum, and bichloride of mercury.

Claim.—As a new article of manufacture, the substance herein described.

No. 52,780.—Edward Wright, Worcester, Mass.—*Let-off for Looms.*—February 20, 1866.—In this invention, as the tension on the warp increases and depresses the whip roll, the arm rises and tightens the friction strap, whilst the arm, through a rod and lever, lowers the guard out of the way of the pawl, and allows it to move the ratchet faster and faster. When sufficient warp is let off, the whip roll rises, and the parts resume their places.

Claim.—The construction and arrangement of the let-off mechanism, consisting of the pawl ratchet guard lever having loose connection with the whip roll and the friction device, all constructed and operating substantially as described.

No. 52,781.—HEMAN P. BROOKS, assignor to TURNER AND CLARK, MANUFACTURING CO., Wolcottville, Conn.—*Head for Picture Nails, &c.*—February 20, 1866.—This invention consists of a wooden body forming the nut to the ornamental head, which is screwed upon the nail or other article, and forms a support to the ornamental portion of the head, and does not require a screw thread to be cut in it, as in articles of metal, as the thread is formed in the hole of the wooden body in the act of screwing the head upon the nail or pin.

Claim.—The head for picture nails, knobs, or tassel hooks, formed with a wooden body or nut, and an ornamental metallic covering or surface, in the manner specified.

No. 52,782.—DOMINICO CHECKENI, Marion, Conn., assignor to himself and GEORGE M. THOMPSON, New Haven, Conn.—*Fancy Doll.*—February 20, 1866.—This invention consists in making a doll with four faces, and having the head pivoted so that either face may be brought to the front. A suitable wig covers the entire head, excepting one face.

Claim.—Making the doll's head with four faces, and suspending it in the wig frame in such a manner that the head may be revolved vertically, so as to bring either of the four faces in front at pleasure, when the whole is constructed and fitted to operate substantially as herein described.

No. 52,783.—CHRISTOPHER G. CROSS, assignor to himself and CHARLES S. CRANE, Chicago, Ill.—*Screw-cutting Die.*—February 20, 1866.—This invention consists in constructing a solid die by arranging the cutters in the sand mould, and casting the body around them.

Claim.—A screw-cutting die, constructed of steel and cast iron or other suitable metal, substantially as set forth and specified.

No. 52,784.—THEODORE A. CURTIS, assignor to GEORGE W. RAY and VARNUM N. TAYLOR, Springfield, Mass.—*Paper Shirt Bosom.*—February 20, 1866.—This invention will be understood from the claims.

Claim.—First, a paper bosom made in two parts, substantially as described.

Second, enamelling said bosom, substantially as described.

No. 52,785.—J. H. DARLINGTON, New York, N. Y., assignor to JOSEPH R. and FREDERIC A. BLOSSOM, Brooklyn, N. Y.—*Apparatus for Pressing Paper Collars.*—February 20, 1866.—This invention is set forth in the description of E. E. Ranou's machine, patented August 2, 1864, said Darlington having received the award of priority.

Claim.—The combination of two or more rollers with a central or main roller, and with a guide *t* through which the collar is entered to the rollers, substantially as and for the purposes specified.

No. 52,786.—ERASTUS M. DAY and JOHN T. NOEL, assignors to H. WINCHESTER and E. M. DAY, Lower Lake, Cal.—*Hay and Cotton Press.*—February 20, 1866.—This machine pertains to that class known as ratchet presses, and the parts are so arranged that the ratchet-teeth with their pawls and eccentrics are protected from waste and dirt. The ratchet bar may be worked by a long or short stroke of the operating lever, and the follower and ratchet bar are easily moved back after the bale is pressed.

Claim.—First, the arrangement in a ratchet press of the inverted ratchet bar, rock shaft, eccentrics and pawls, substantially as and for the purpose herein specified, whereby the ratchet bar is made to serve as a shield for the protection of the ratchet-teeth, pawls and eccentrics from waste and dirt.

Second, in a ratchet press having the ratchet pawls worked by eccentrics on a rock shaft, the pawls, two for each eccentric, arranged in relation to the ratchet teeth, substantially as herein described, whereby the operation of the ratchet bar by a longer or shorter stroke of the lever, by which the rock shaft is worked, is provided for.

Third, the disengaging cam and its supporting shaft, arranged in relation to the bed of the press, the ratchet bar and pawls, substantially as and for the purpose herein specified.

Fourth, the arrangement of the follower, its attached ratchet bar, the rock shaft eccentrics, pawls, operating lever, and disengaging cam, in relation to each other, and to the bed or foundation of the press, substantially as herein specified.

No. 52,787.—SAMUEL GESSINGER, Alleghany City, Penn., assignor to himself and PETER KOLBECKER, Pittsburg, Penn.—*Blacking Brush and Bootjack.*—February 20, 1866.—This invention consists in forming a bootjack in two parts, hinged so that they can be folded together, and in the two outer edges bristles are inserted to form a brush.

Claim.—The combination of blacking brush and a bootjack, said blacking brush and bootjack being constructed, combined, and operating substantially as herein described and set forth.

No. 52,788.—STUART GWYNN, New York, N. Y., assignor to ALFRED B. ELY, Newton, Mass.—*Process for Saturating Wood, Cloth, Paper, &c., with Paraffine.*—February 20, 1866.—This invention consists in first saturating the material to be treated with water, and while

the article is wet, treating it with hot paraffine, which drives out the water, and completely saturates the material.

Claim.—First, the use of paraffine melted and heated to a high degree for saturating cloth and wood, in the manner and for the purposes substantially as described.

Second, its use for saturating paper when it is to be used for roofing and other similar outside coverings, and for linings for boxes and such like, when durability, imperviousness to moisture and resistance to the action of acids and the elements are desired, as also for linings for hats, shoes, garments, and other articles of fibrous materials.

No. 52,789.—ALVIN LAWRENCE, assignor to himself, AMBROSE LAWRENCE, and JOHN E. CRANE, Lowell, Mass.—*Steam Engine.*—February 20, 1866.—This invention consists in combining with a governor a valve and cylinder in such a manner that the valve may be operated by the governor, and the admission and exhaust ports be opened and closed to admit fluid under pressure into either end of the cylinder, for the purpose of regulating a valve or gate, which admits steam or fluid to the motor. In connection with the valve a spring is arranged for the purpose of restoring the valve to its normal central position, after it has been carried in either direction therefrom by the action of the governor.

Claim.—First, the combination and arrangement of the valve D with the cylinder A, or its equivalent, when the said valve is connected with and operated by the governor, substantially as and for the purpose specified.

Second, and in conjunction with the cylinder A, or its equivalent, the valve chest E, and valve D, said valve being connected with and operated by the governor, the use and application of fluid under pressure, for the purpose of operating the throttles, valves, or cut-off gear of steam-engines, substantially as specified.

Third, and in combination with the valve D, the same being connected with and operated by the governor, the employment of the spring H, or its equivalent, for the purpose set forth.

Fourth, and in combination with the cylinder A, valve chest E, and valve D, said valve being connected with and operated by the governor, as above stated, the supply pipe F, and regulating cock G, substantially as and for the purpose specified.

Fifth, the general construction and combination of the apparatus, consisting of the cylinder A, piston head B, piston rod C, and lever M, or its equivalent, the valve D, valve chest E, supply pipe F, regulating cock G, and the governor, the whole arranged substantially as, and for the purpose set forth.

No. 52,790.—DUNCAN MCARTHUR, assignor to SARGENT & COMPANY, New Haven, Conn.—*Mould for Casting Heads upon Screws, Tacks, &c.*—February 20, 1866.—This invention consists in hinging upon the centre of a block the two parts of the mould, one carrying the dies for holding the screw or tack, the other the mould for the head to be cast. The part carrying the dies is turned down, and the screws inserted with their points downward; the other part is then turned down over it, so as to hold the screws from falling out, when both are turned over the other way, so that the heads are downward when the casting is done, and again the mould is turned over, and a pin fastened to the block strikes the core or central part of the casting, which is connected to the newly formed head, and knocks the whole out of the mould.

Claim.—A mould consisting of the parts A and B, when hinged together upon a plate C, so as to be operated substantially in the manner as herein set forth.

No. 52,791.—ELI MORRIS, JR., assignor to himself and EDWARD HEATON, New Haven, Conn.—*Bottle Stopper.*—February 20, 1866.—This invention consists of an elastic stopper attached to a rod, which is secured to a lever. The lever is pivoted to the mouth of the bottle, or to a suitable support.

Claim.—The lever C and stopper D, when combined and arranged substantially in the manner and of the purpose herein set forth.

No. 52,792.—R. F. OSGOOD, Rochester, N. Y., assignor to CHARLES W. KINNE, Cortland, N. Y.—*Method of Sinking Well Tubing.*—February 20, 1866.—This invention consists in the use of a short cylinder inside the main tube, at the bottom thereof, so that in the act of driving, the ports in the main tube may be closed, but when the tube is driven into place, the interior cylinder may be partially turned, so as to bring its ports in coincidence with those of the main tube.

Claim.—The cylinder or short section of tube B, in combination with the tubing A, arranged in such a manner that in the act of driving the earth is excluded, but when driven the water may be admitted by simply turning the cylinder, and without raising the tubing, substantially as described.

Also, the wire cloth *d*, covering the ports, in combination with the cylinder B and tubing A, substantially as specified.

Also, the valve F, in combination with the cylinder B, substantially as described.

No. 52,793.—H. D. PARKER, Geneseo, N. Y., assignor to C. L. BURTIS, THOMAS A. BARROWS, and ELI S. HART.—*Pipe Coupling.*—February 20, 1866.—This invention con-

sists in coupling wood pump rods together by means of a socket upon each of the ends to be coupled, the sockets being larger at their bottoms or inner ends, which have a screw-tapped hole, one being right and the other left handed, into which the coupling is secured. Before inserting the coupling, conical wedges are driven part way into the ends of the wooden rods through the screwed holes, and then forced home by the ends of the coupling when screwed up.

Claim.—Coupling the ends A A of two sections of rod by means of the wedging sockets B B, connecting bolt D, or equivalent, and wedges C C, operating substantially in the manner and for the purpose herein described.

No. 52,794.—NICOLAS PIKE, assignor to EMMA TAYLOR, Brooklyn, N. Y.—*Fly Trap.*—February 20, 1866.—This invention consists of a box containing a suitable composition, and suspended by a cord passing through two small holes in the lid or cover of the box, and an eye or pulley in the bottom of the box, and having each end attached to the ceiling or a suitable support. The suspending cord is coated with the composition; the flies are attracted thereto, and are scraped off upon the cover each time the cord is slipped through the box for the purpose of wetting the same.

Claim.—A box for containing the fly composition with a string, wire or rod, arranged in such a manner that by moving either the string, wire or rod, or the box, the former may be drawn or passed through the composition, and the flies at the same time stripped from the string, wire or rod, substantially as and for the purpose set forth.

Also, in connection with the string, wire or rod, constructing the lid or cover B of the box with a flange *a*, to form a fly receptacle as set forth.

Also, the box A, cover B, tubes E, bar C, and string or wire D, all arranged and combined substantially as and for the purpose specified.

No. 52,795.—RUSSEL PROUTY, assignor to J. ELDER and J. B. WILSON, Springfield, Iowa.—*Fence.*—February 20, 1866.—In this invention the alternate pickets have oblique slots sawed into them at different distances. A wire is stretched from post to post, both at top and bottom, and assumes a zigzag line, thus keeping the pickets in place.

Claim.—The combination and arrangement herein described of the posts A A, wires B, and pickets or slats C C′, when said pickets or slats are provided with oblique notches *a* and *a′*, made at different distances apart in the successive or adjacent pickets so as to force the wires into a zigzag shape, and cause the two wires to strain in opposition upon each picket, as and for the purposes specified.

No. 52,796.—ELLIOT SAVAGE, West Meriden, Conn., assignor to himself, GEORGE S. HARWOOD, and GEORGE H. QUINCY.—*Process for Converting Iron into Steel.*—February 20, 1866.—This invention consists in heating cast iron in a bath of fused cyanide of potassium, or other equivalent substance, and then cooling the metal thus heated in a solution of metallic salts, such as the salts of copper, silver, &c.

Claim.—First, the improved method of hardening and tempering steel by heating the same in cyanide of potassium previous to its immersion in a cooling liquid.

Second, the improved mode of treating iron for the purpose of producing upon it the effects of case-hardening by heating the same in a bath of cyanide of potassium, and by submerging it in cooling liquid.

Third, the improved mode of treating cast iron for the purpose of converting it into steel, or a substance resembling steel, by heating the same in a bath of cyanide of potassium and submerging it in a cooling liquid.

Fourth, in the method of treating iron, steel and other metals by means of cyanide of potassium as and for the purposes hereinbefore set forth, the use of metallic solutions as the cooling liquid.

No. 52,797.—EDWARD STOCKER, assignor to himself and EMANUEL SHOBER, Lancaster, Penn.—*Hydrant.*—February 20, 1866.—This device is so constructed that it can be removed for repair or protection from frost by a band in the pipe, on which is affixed a solid stem or shank to which a key may be applied from the top of the casing, and the pipe unscrewed without disturbing the earth by digging around it.

Claim.—The stop-cock A, with its curved screw ends E D, and conic turn-point C B, in combination with the fixed base F G N, with or without the stop-off key *h*, all arranged and operating substantially in the manner and for the purpose specified.

No. 52,798.—CHARLES H. TRASK and J. B. JOHNSON, Lynn, Mass., assignors to themselves and G. L. THAYER, Boston, Mass.—*Boot and Shoe.*—February 20, 1866.—This invention consists in a sole channel, made with two lips arranged so that when closed they will meet together directly over the channel.

Claim.—The improved channel C, as made with the two lips *i k*, arranged so as, when closed, to meet together directly over the channel, substantially as hereinbefore described and as represented in the remaining figures of the said engravings.

No. 52,799.—WILLIAM W. WINTER, assignor to himself and STEPHEN BREWER, Cortlandville, N. Y.—*Driving Apparatus of Metal or Wood into the Ground.*—February 20, 1866.—A weight or driver made of stone, wood or metal, having a hole through the centre through which the rod or pipe to be driven passes, the said rod or pipe when started into the ground a short distance proving a sufficient support and guide of the weight while operating the same. To the top of the rod is fastened a pulley over which a cord attached to the weight passes.

Claim.—A driving apparatus constructed in a manner that the weight or driver is supported and guided by the rod or tube to be driven, and also the application of the pulley thereto, substantially as herein shown and described.

No. 52,800.—GEORGE F. WRIGHT, Clinton, Mass., assignor to himself and WILLIAM ORR, JR.—*Fastenings for Paper Boxes.*—February 20, 1866.—This invention consists in substituting for cloth or paper corner pieces in connecting the joints of boxes, metallic clasps, provided with spurs, which pass through the pasteboard, and in the act of clinching draw the two pieces of pasteboard together while the clasps cover the joints.

Claim.—The application of metallic clasps upon the joints of the pasteboard in paper boxes, substantially as and for the purpose specified.

No. 52,801.—THOMAS MATTHEW GISBORNE, Lymington, England.—*Brick Machine.*—February 20, 1866.—This invention is explained by the claim.

Claim.—First, arranging a series of kilns, burning on the principle of the New Castle kiln, side by side in such a manner that the front or combustion end of the one kiln is contiguous to and can communicate with the back or chimney end of the next kiln, while the chimney end of each kiln can furthermore communicate either with a chimney common to all, or with a separate chimney.

Second, constructing a series of kilns burning on the principle of the New Castle kiln, placed side by side and made to taper from the combustion end to the chimney end, the chimney end of one kiln being made capable of communicating either with the combustion end of the next kiln or with a common or separate flue or chimney.

Third, constructing a series of kilns, burning on the principle of the New Castle kiln, made to taper from the combustion end to the chimney end, and arranged side by side alternately in reversed positions, the chimney end of the one kiln being made capable of communicating either with the combustion end of the next kiln or with a common or separate flue or chimney.

No. 52,802.—CHARLES HENRY SOUTHALL and ROBERT HEAP, Staleybridge, England.—*Machine for Making Boots and Shoes.*—February 20, 1866.—In this machine the sole is secured by means of metal screws, and a mechanism which, operating automatically, shapes the sole from leather supplied to the machine, makes the screws from wire placed upon the machine, secures the sole to its upper by means of the screws thus made, and finally finishes the edge of the sole, requiring only in addition to the supply of wire and leather, that the upper be properly fitted to the last, and thus lasted.

Claim.—First, the brake i, lever f^3, and lever j, for instantly stopping the drum e, when the driving power is taken off.

Second, the improved vices for holding the boots and shoes so firmly that they can be operated upon with ease and certainty.

Third, the bearings or brackets y on the tables for enabling the vices, and consequently the boots or shoes, to move up and down according to the shapes of the bottom of soles.

Fourth, the system of employing under each table a rack round at one end and straight at the sides, so as to be adapted to all sorts and sizes of boots and shoes.

Fifth, the cam or pattern plates for determining the aforesaid up and down movement with certainty.

Sixth, the employment of the long shaft o', plates n' and e', the casting k', the long pedestal shaft c', and the shaft g' for enabling the table to move to and fro and up and down easily.

Seventh, the deep wheel a^2, or an ordinary wheel which rises up and down with the wheel f', for maintaining the wheel f' constantly in gear.

Eighth, the balance lever q', for raising the table and its appendages when a catch is removed.

Ninth, the cam-shaped hammer s', raised by the chain z' and weight y', for forcibly pressing the sole of the boot or shoe against the nose of the shears.

Tenth, the cam v', on the shaft k, the lever u', and the chain x', for taking off the weight of the hammer when the boot or shoe has to be moved for a fresh screw, and allowing the weight to be put on immediately the cam has passed the tail of the lever.

Eleventh, the system of making the holders, guards, and cutters, as shown in Figs. 12, 13, and 14, for paring or shaping the soles and heels after they have been screwed on, and also the employment of similar holders for the finishing tools.

Twelfth, the movable arm or lever l^3, Fig. 1, for carrying the holders with the paring and finishing tools, and also the levers m^3 and n^3, for enabling the tools to follow the surface and sides of sole and heel.

Thirteenth, the cams x^3 and x^4, Fig. 1, for acting on the levers v^3, for giving, by means of the gearing and clutches r^3, alternate motion to the table k^3.

Fourteenth, the weight q^3, or its equivalent, connected directly or indirectly to the slide p^3, jointed to the movable arm l^3, for keeping the cutters and tools in their places as their guards ride on the surface of the sole or heel.

Fifteenth, the apparatus shown in Figs. 15 and 16, for holding the leather to be cut into soles, and also the application to a holder similar to those shown in Figs. 12, 13, and 14, of a cutting knife, Fig. 17, for cuting the soles from the hide.

Sixteenth, the adaptation of our improvements either to one machine, as shown in the drawings, or to a machine employed only for cutting the soles, or to a machine for only screwing the soles and heels on to the uppers or coverings, or to one employed only for paring and finishing, as all such improvements are herein described and illustrated in the accompanying three sheets of drawings.

No. 52,803.—W. BENTLEY WOODBURY, Manchester, England.—*Printing Photographs.*—February 20, 1866.—This invention consists in producing surfaces in "relievo" and "intaglio" (relief and depression) upon aluminous material or semi-transparent material, so that when viewed as a transparency the varying thickness in the material will show the picture, or for the purpose of producing "relievo" or "intaglio" in any plastic or fusible material, so as to have the appearance of a "bas-relief" or "intaglio," and the invention is useful in producing copies of such articles.

Claim.—The use, in connection with the plate herein described, or with any engraved plate, of semi-transparent or partially transparent inks, substantially in the manner and for the purpose specified.

No. 52,804.—JAMES C. COOKE, Middletown, Conn.—*Machine for Cutting Files.*—February 20, 1866.—This machine is composed of a cutter head actuated by a cam and sliding in inclined ways to which the cutter stock is attached by a horizontal swivel joint, so that at whatever obliquity the chisel may be placed its cutting edge will lie in a horizontal plane. Certain mechanism is used for elevating and depressing the carriage upon which the blank rests and governing automatically the initiation and direction of said movement, by which the upper surface of the blank immediately under the cutter, whether it be near the point where it is thinnest or at the middle portion where it is thickest, will be brought to the same level.

Claim.—First, the securing of the cutter stock F to the reciprocating head E, in the manner shown, or in any equivalent way, so that said cutter stock may be turned and adjusted at any point within the scope of its movement, to give the cutter a proper oblique position with the file blank, and the cutter always have its cutting edge in a horizontal plane.

Second, placing the reciprocating head E between inclined guides *a a*, so that said head will work in an inclined direction when said head, thus arranged, is used in combination with a cutter stock F, applied in the manner substantially as described.

Third, the securing of the file blank L to the bed K by means of the jaws *n n'*, arranged substantially as set forth.

Fourth, the raising and lowering of the bed I to compensate for the varying thickness of the file blank L, by means substantially as described.

Fifth, the means employed for communicating from shaft B motion intermittingly, and in either direction to the shaft Y, which turns the central screw T, to wit, the two ratchets *z z'*, pawls A' A'', operated from the shaft B, as shown and described, the sleeve or collar F', on shaft Y, with pinion G' and the cam H' and collar I' upon it, the brake J' and the segment L', all arranged substantially as set forth.

Sixth, the bar P' connected with the arm M', having the tooth segment L', attached, when said parts are used in connection with a bar or "feeler" Q* connected with cutter stock F, and all arranged to operate substantially as described.

Seventh, the bar or "feeler" Q* applied to the cutter stock F, in the manner substantially as set forth.

No. 52,805.—B. F. HISERT, Norton Hill, N. Y.—*Horse Hay-fork.*—February 20, 1866.—In this invention the main bar is provided with an opening in its upper part over which moves a slide furnished with a locking bar and an arm, which extends to the tine below through the main bar. A spring catch engages with the locking bar in the opening, said catch being operated by a lever with its cords passing around the main bar and forming a loop.

Claim.—First, the bar A, provided with the pivoted tine H, in combination with the slide C, connected to the tine by a rod I, the catch D attached to the spring E and the bar *c*, in the slide C, all arranged to operate substantially as and for the purpose set forth.

Second, the bar A with its pivoted tine H, in combination with the rod I, pivoted to the tine H near its centre of motion, the locking bar *c* and spring catch, for the purpose described.

Third, the combination of the catch D, the tripping lever F, and the sliding locking bar *c* with the bar A and pivoted tine H, substantially as and for the purpose described.

Fourth, the combination and arrangement of the catch D, tripping lever F, bar A, loop *f* and cord G, as and for the purpose described.

No. 52,806 —ANDREW O'NEILL, Portsmouth, Ohio.—*Guard Plate for Boilers.*—February 20, 1866.—In this invention a cast iron guard plate for attachment to the bottom of boilers may be reticulated and provided with feet and a marginal flange if desired.

Claim.—First, a cast metal guard plate or shield for attachment to the bottoms of boilers, either with or without the openings, feet, or marginal flange, substantially as described and represented.

Second, the cast metal guard plate in combination with the feet C, for the purpose described.

Third, in combination with the cast metal guard plate, the rim or marginal elevation B, embracing the shoulder of the "pit" or drop of a sheet metal boiling vessel.

Fourth, in combination with the guard plate the slot E, for the passage of the rivets in case of the unequal expansion of the vessel and plate.

No. 52,807.—THOMAS J. CORNELL, Decatur, Ill.—*Plough.*—February 20, 1866.—This invention consists in the arrangement of conical cutter wheels with the plate or cover of the plough whereby the earth is cut or pulverized thoroughly as it is thrown up and turned over by the mouldboard, while at the same time the plate or cover prevents the earth from falling over and between the mouldboard and landside, thereby preventing the draught wheel from being clogged by the dirt.

Claim.—First, the plate or cover G placed between the upper edges of the landside and mouldboard when used in connection with the wheel E, for the purpose specified.

Second, the wheel I, constructed and arranged substantially as shown, journalled on a horizontal axis set obliquely to the line of draught, and rotated by contact with the furrow slice.

No. 52,808.—HENRY MAYCOCK, Verona, N. Y.—*Operating Horse Hay-forks.*—February 20, 1866.—See claim and cut.

Claim.—First, the arrangement of the guard rope D′, weight F, pulley E, and whiffletree D, constructed and operating in the manner and for the purpose herein specified.

Second, in combination with the above, the arrangement of the guide rope G, ring *d*, and rope C, constructed and operating in the manner and for the purpose herein specified.

No. 52,809.—A. S. ACKER, Albion, N. Y.—*Harvester.*—February 27, 1866.—This invention has for its object the preventing of the wear and rattling of the joint of the pitman and sickle bar consequent upon the necessarily rapid movement of the latter, and consists in fitting a thimble of India-rubber, or its equivalent, in the eye formed in the heel end of said sickle bar for the reception of the bent end of the pitman.

Claim.—The thimble E, constructed of India-rubber, leather, or other suitable elastic or yielding material, fitted in the eye of the sickle bar to receive the pitman C, substantially as and for the purpose herein set forth.

No. 52,810.—JOHN F. ALLEN, New York, N. Y.—*Apparatus for Punching.*—February 27, 1866 —In this apparatus two screws are used for forcing the punch, one screwing into the first with a finer thread, so that when the larger or outer screw is turned the inner one, being held from turning by a square shank passing through a square hole in the stock, screws into it, and therefore exerts a slow and powerful downward movement.

Claim.—The arrangement and combination of the punch D, or its equivalent, screwed into the screw block C, the pitch of the thread on the punch D being finer than the pitch of the thread on the block C, and acting together in such a manner that while the punch D is prevented from turning, the same will be forced downward by a power applied to the block C, the whole being arranged and combined in the manner and for the purpose substantially as described.

No. 52,811.—JOHN ANDERSON, Waukesha, Wis.—*Device for Driving Fence Posts.*—February 27, 1866.—The object of this invention is to produce a machine intended more particularly for farmers' use, whereby fence posts may be driven into the ground in a quick, easy, and inexpensive manner.

Claim.—The combination of the truck frame A B B′, standards C C, uprights F F, shank D, hammer E, rope *b*, windlass G, clutch H, and stop or lug *g*, all arranged and operating substantially as explained.

No. 52,812.—JAMES C. ARMS, Northampton, Mass.—*Paper Shirt Bosoms.*—February 27, 1866 —This invention will be understood by reference to the claim and engravings.

Claim.—A paper bosom having a central plait formed by folding the paper as shown and described, with or without the points D, of sufficient length to reach around the neck and provided with the button-holes *a*, the whole constituting a new article of manufacture.

No. 52,813.—CHRISTOPHER D. BAKER, Wheeling, W. Va.—*Puddling Furnace.*—February 27, 1866.—This invention consists of a furnace built entirely above ground, the lower part of said furnace being composed of metallic plates which are supported upon bed plates. The fire brick extend to the chills which are made hollow in order that a current of air or water

may be drawn through them to prevent the heat from injuring them. Flues are made in the body of the furnace to allow the steam generated by the heat to escape. The grate is arranged so as to be level with the top of the chill in order to reduce the quantity of fire brick in the bridge. Two furnaces may be built back to back.

Claim.—First, constructing a puddling furnace entirely above ground, substantially as described.

Second, surmounting the iron chamber with fire brick, substantially as and for the purpose described.

Third, surmounting both the iron chamber and the fire chamber with fire brick, substantially as and for the purpose specified.

Fourth, providing the raised border or chill of the iron chamber with a groove, passage, or channel, to adapt it to be preserved from heat by the application of water or air as described.

Fifth, making the raised border or chill of the iron chamber of wrought iron as described.

Sixth, the described method of arranging the fire grate relatively to the iron chamber.

Seventh, setting the stack close up against the furnace in the manner and for the purpose set forth.

Eighth, the passages or spaces I in the brick-work for conducting off the air and steam which emanates from the groove in the chill, as described.

Ninth, joining two furnaces back to back in any manner, substantially as described.

Tenth, the combination of three main walls with two stacks, as and for the purpose described.

No. 52,814.—W. W. BARNES, Lyme, N. H.—*Machine for Raking and Loading Hay.*—February 27, 1866.—This invention consists in the combination of a stationary and hinged rake with an endless elevating belt, all being attached directly to the rear end of the wagon.

Claim.—First, the apparatus consisting of the frame B, provided with the belt C, the stationary rake E, and pivoted rake D, when secured to the rack A, in the manner shown and described.

Second, the combination of elevator, the stationary rake E, and the adjustable hinged rake D, as and for the purpose set forth.

No. 52,815.—TRUMAN P. BASHFORD, Decatur, Mich.—*Drilling Machine.*—February 27, 1866.—This invention consists in the arrangement of the drills upon a sliding bed, drawn up to the work by a foot lever connected to the sliding stock by a rope over a pulley, and drawn back by a weight attached to the other end.

Claim.—The arrangement and combination of the drills B, platform E, ropes I, treadle J, and weight K, when operated by crank F or belt G, as herein described and for the purposes set forth.

No. 52,816.—HORATIO BATEMAN and DAVID CUMMING, JR., New York, N. Y.—*Drills for Oil and other Wells.*—February 27, 1866.—This invention consists of a sliding frame carrying the drill tools operated by a cam, which, when released, allows the frame to slip and the tool to drop. A spring is so arranged that when the tool falls it will be "jarred" loose.

Claim.—First, the cam E, in combination with the sliding frame D, and the spring I, for the purposes specified.

Second, in combination with the above, the spring G, for the purpose of operating the jars, substantially as described.

No. 52,817.—HUBBARD BEEBE, New Haven, Conn.—*Apparatus for Folding Linen Bosoms.*—February 27, 1866.—In this invention a trough is formed narrowing from one end to the other. At the wide end the linen of proper width is rolled on a spool. It thence passes under a flat smoother, between two rollers, one having annular projecting blades, the other corresponding grooves, by means of which the linen is creased upon the desired folding lines. It is then drawn under a narrowing succession of folders, and is finally wound upon a cylinder at the narrow end of the trough or frame.

Claim.—The combination of folders with the creasing rolls D and D′, substantially in the manner and for the purpose specified.

No. 52,818.—HIRAM BERDAN, New York, N. Y.—*Metallic Cartridge.*—February 27, 1866 — The object of this invention is to swage the cartridge into a tapering form by means of a suitable die, after the charge, fulminate, and bullet have been inserted, and to protect the fulminate from explosion by the necessary pressure. It is placed in a recess at the rear end of a central stem, which stem, though placed within the case before being charged with powder, by entering a cavity in the base of the bullet, becomes attached thereto by the swaging process referred to, which completes the manufacture of the centrally primed cartridge.

Claim.—As a new article of manufacture a metallic cartridge, having a stem projecting from the base of the bullet into a cavity at the rear end for the fulminate, the case being made with a flange at the rear end, and tapering toward the forward end, and drawn down upon the bullet by means of a swage or die, whereby the external surface of the cartridge

can be made more uniform, less liable to explode in the act of construction or transportation, and the shell more readily extracted after being fired.

No. 52,819.—THOMAS BOYD, Des Moines, Iowa.—*Corn Harvester.*—February 27, 1866.—This invention consists in the arrangement of a peculiar device which may be mounted on a common harvester, and so operated as to discharge the corn in shocks.

Claim.—The revolving frame B, in combination with the sliding frame C applied to a harvester, or a mounted frame provided with a cutting device, substantially as and for the purpose herein set forth.

Also, the turning of the frame B through the medium of a windlass F, arranged to serve as a driver's seat.

Also, the clamp K, or its equivalent, in combination with the revolving or turning frame B, sliding frame C, substantially as and for the purpose specified.

No. 52,820.—E. R. BROWN, Mauch Chunk, Penn.—*Railway Brake.*—February 27, 1866.—This invention consists in dispensing with the brake or shoe-bar hitherto universally used, and which is attended with considerable annoyance on account of their liability to break, and which not unfrequently is the source of serious accidents.

Claim.—As an improvement in railroad-car brakes, the arrangement of the levers D D and levers F F, in combination with the rods F* F*, to operate in the manner as herein described.

No. 52,821.—GEORGE M. CAMPBELL, Lewistown, Ill.—*Hemp Brake.*—February 27, 1866.—The brakes are so constructed that the slats may be changed and adjusted at such a distance from each other as may be best suited to the kind of hemp to be worked, whether coarse or fine, thus permitting two hands to work at each brake. The general frame-work is so constructed that the hemp may be easily put between the brakes while the machine is in motion.

Claim.—The adjustable slats *l n*, keys *s*, and head blocks *m m*, when the several parts are constructed, arranged, and operated as and for the purpose set forth.

No. 52,822.—HENRIETTA H. COLE, New York, N. Y.—*Clasp for Looping Ladies' Dresses.*—February 27, 1866.—In this invention a frame of shield-like form, but concave back, has two plates hinged centrally, which, when closed, have open spaces at their ends, to permit the passage through of folds of the dress. These plates are held close by a spring upon the back of each, the end of each spring turning up at the centre, so that both springs can be opened at once by the pressure of their heels together, between the thumb and finger.

Claim.—First, the combination of the jaws B B with a frame A and spring C, substantially as and for the purpose herein specified.

Second, the spring C, in combination with the jaws B B, cross-bar *a*, and frame A, substantially as described.

Third, the noses D D, arranged in relation to each other and to the jaws A A, substantially as and for the purpose specified.

Fourth, the combination with each other of the frame A, jaws B B, spring C, noses D, and cross-bar *a*, as herein shown and described.

No. 52,823.—N. B. COOPER, Gratis, Ohio.—*Broom Head.*—February 27, 1866.—The end of the handle is barbed, and upon the same is placed the broom head, which is secured by means of straps.

Claim.—The barbed end of handle *d*, in combination with the broom head A furnished with straps C, the whole constructed and operating as and for the purpose substantially as herein set forth.

No. 52,824.—JAMES E. CRONK, Poughkeepsie, N. Y.—*Water Elevator.*—February 27, 1866.—The windlass shaft extends beyond the curb, and terminates in a head having tappets. Next to the curb and loose upon the windlass shaft is a ratchet wheel, within the outside of which, or within a disk rigidly connected thereto, the crank shaft is so arranged as to make a quarter turn. A projection from it, near the centre, engages with the tappet on the windlass shaft in the act of lifting, but a reverse movement of the crank releases it, and lets the bucket run down. Within the curb, on the opposite side, is a slotted bar secured at its lower end, and vibrating with or upon a pin near the periphery of a wheel on said shaft, in such a manner as to regulate the descent of the bucket, and allow it to be thrown out of gear in its ascent.

Claim.—First, the revolving crank mounted on a stem which is provided with a nose, in combination with one or more tappets on the windlass or on its shaft, constructed and operating substantially as and for the purpose set forth.

Second, the slotted bar D, applied in combination with a windlass which is provided with a detachable or adjustable crank, substantially as and for the purpose described.

No. 52,825.—THOMAS CROSSLEY, Bridgeport, Conn., assignor to the American Waterproof Cloth Company.—*Fabric for Carpets and other purposes.*—February 27, 1866.—This invention consists of a compound fabric, with the face made so as to be printed or dyed;

it may also be strengthened by a backing cemented or united by other means with jute linen, or other strong fabric.

Claim.—First, the fabric composed in the manner hereinbefore described, suitable to be dyed or printed as a carpet, or as the face of a carpet.

Second, the carpet composed of said face, and a jute linen or other back, either with or without being united by an India-rubber or other vulcanizable gum.

Third, the fabric with the loops cut and the face finished in the manner above described, forming a velvet or other face, similar to velvet and other tufted carpets.

Fourth, the uniting of the face with the back of such fabrics by such other sheets of cement or water-proof compound, which will serve as an equivalent for vulcanized India-rubber.

No. 52,826.—Frank Cunningham, Chicago, Ill.—*Machine for Forming Horse Collars.*—February 27, 1866.—This invention consists in the combination of the jaws, the ends of which are curved, and a lever operating between them by pressure upon the leather to be shaped between the two jaws.

Claim.—The arrangement and combination of the parts B C D and A, substantially as set forth.

No. 52,827.—John D. Dale, Rochester, N. Y.—*Rock Drill.*—February 27, 1866; antedated February 15, 1866.—This invention consists in a slide carrying the drill rope having a rising and falling motion, arranged with a windlass, so that only one pulley intervenes between the windlass and drill, thus reducing the wear and tear of the rope. A hinged prop is applied to the slide, so that the slide can be stopped by the prop whenever desired. A peculiar construction of a ratchet and worm wheel, tightening pulley, and crane, admits of every part of the device being in the reach of the operator without changing his position.

Claim.—First, the arrangement of the slide C, pulley D, rope E, and lever N, in the manner and for the purpose described.

Second, the prop *o*, applied in combination with the nose *n* on the side of the rising and falling slide C, constructed and operating substantially as and for the purpose described.

Third, the ratchet worm *g* mounted on a shaft *h* which turns up and down, in combination with a worm wheel *f* mounted on the shaft of the reel I, and with a hand lever *j*, or its equivalent, constructed and operating substantially as and for the purpose specified.

Fourth, the tightening pulley M and hinged lever N, applied in combination with the rope *q*, and with the belt K running on the pulleys J L, substantially in the manner and for the purpose set forth.

Fifth, the application of a crane P, in combination with the cross-bars of the derrick which supports the boring rope, substantially as and for the purpose set forth.

No. 52,828.—Morris Dickle, Wellersburg, Penn.—*Fence.*—February 27, 1866.—Upon the bottom sill are side pieces or strips, forming the post, which is supported by two cross pieces. The side pieces are made tapering, and are covered by two square pieces to protect them from the weather.

Claim.—The construction of the portable fence as herein described and for the purposes set forth.

No. 52,829.—George W. Disman, Upper Sandusky, Ohio.—*Composition for Journal Boxes.*—February 27, 1866.—This invention consists of a composition made by fusing together one pound of copper, four ounces of glass, one ounce of borax, half an ounce of prussiate of potash, and eight ounces of lead.

Claim.—A composition for journal boxes or bearings, composed of copper and glass, and mixed or fused with borax and prussiate of potash, and with or without lead, as herein described and for the purpose specified.

No. 52,830.—Alpheus Dolloff, Lake Village, N. H.—*Potato Digger.*—February 27, 1866.—This invention consists of a blade or scoop, made to pass under and gather up the potatoes, and an endless revolving screen which receives the potatoes and earth from the blade, and separates the latter from the potatoes by sifting through its meshes while conveying the potatoes upwards and backwards, to be deposited on the ground behind the machine; the blade having the action of a plough in its movement, as the machine is drawn along and guided by handles, and the revolving screen requiring rotary power to move it. Driving wheels supporting the rear end of the machine are employed for the purpose of giving motion to the screen.

Claim.—First, the combination and arrangement of the duplicate beams A A, each provided with an adjustable caster wheel *t*, and the two beams being connected by oblique brace rods *a a*, substantially as and for the purpose herein set forth.

Second, the construction of the driving wheels B B, with the gear openings *d d* in the peripheries thereof, in combination with the pinions K K gearing into said openings, substantially as and for the purpose herein specified.

Third, the pinions K K, when made with the sloped surfaces at the bottoms of the recesses between the cogs, for the purpose set forth.

Fourth, the vibratory bars P P, for giving a shaking motion to the endless screen, arranged and operating substantially as herein specified.

No. 52,831.—Edwin C. Dow, Brooklyn, N. Y.—*Boring Tool for Oil Wells.*—February 27, 1866; antedated February 11, 1866.—This invention relates to the formation of chambers in the bore of a well, and consists in a mode of applying and adjusting the cutters, whereby their expansion while the tool is in the well is provided for. Provision is also made for withdrawing them through the smaller portion of the bore above, after the chambering of the lower portion has been completed.

Claim.—The combination of the tubular stock A, the pivoted vibrating rods *a*, the hinged cutters *b*, and the central sliding rod B, with its projections *d* and wedges *f*, substantially as herein specified.

No. 52,832.—H. C. and J. W. Drew, Waterloo, Mich.—*Carriage Wheel.*—February 27, 1866.—This invention consists in a mode of connecting the draught pole with the front wheels and axles, so that the wheels in passing over obstructions which lie in their path are prevented from acting on the draught pole and moving the same laterally.

Claim.—First, the use and application of the two bars K, in connection with the draught pole J, and the bars L, and bars G, and the axles E E, the whole constructed and arranged as and for the purpose herein set forth.

Second, the movable centre chairs H, in combination with the link *i*, constructed in the manner and for the purpose herein specified.

Third, the hinges S S connecting the bars L with the bars G, constructed and arranged substantially as herein described.

No. 52,833.—Robert N. Eagle, Washington, D. C.—*Flexible Brush.*—February 27, 1866.—This invention consists of a two-handled brush made in sections, with flexible joints, having the bristles placed so as to partially embrace the object to be brushed.

Claim.—A two-handled flexible brush, made substantially as described.

No. 52,834.—John H. Elward, Polo, Ill., and John L. Hayes, Boston, Mass.—*Process of separating Gold and Silver from Ores.*—February 27, 1866.—This invention consists in treating the heated ore with nitrate of soda or potash. The ores thus treated are cooled and amalgamated, if said ores contain silver. If containing gold they are raised to a red heat before amalgamating.

Claim.—The process of oxidizing sulphurets containing the precious metals, and converting them into sulphates by the use of solutions of nitrates, for the purpose and in the manner substantially as above described.

No. 52,835.—Joel F. Fales, Walpole, Mass.—*Carpet Lining.*—February 27, 1866.—This invention consists in composing a layer of cotton or other soft flexible substance placed between two layers or sheets of paper and stitching or quilting all together, to be placed on the floor under the carpet.

Claim.—The carpet lining made as above described as a new article of manufacture.

No. 52,836.—George H. Felt, New York, N. Y.—*Plug for Blasting.*—February 27, 1866.—This invention consists in the application to or within the hollow to be plugged of one or more cylinders of vulcanized rubber or other similar material which are expanded by means of nuts and screws operating on washers, and the heads of the bolts passed through the said cylinder of rubber, the bolts acting separately on the said cylinder of rubber.

Claim.—First, the combination of cylinders of vulcanized India-rubber or other similar material with screw bolts or tubes acting separately and being detached, by means of which increased outward pressure is produced, substantially as and for the purposes herein specified.

Second, igniting the charge at any desired point by extending the inner tube within the charge or cartridge to the point desired, substantially as and for the purposes herein specified.

No. 52,837.—John Fleck, Santa Cruz, Cal.—*Quartz Crusher.*—February 27, 1866.—This invention consists of two reciprocating converging jaws, which are directly attached to a lever that is pivoted centrally between said jaws, so that when the lever is oscillated by the pitman attached to the crank-pin of a revolving crank wheel, it gives to the jaws a reciprocating motion in opposite directions.

Claim.—First, the two jaws A A, provided with two upper inclined parts *a a*, and two lower vertical parts *b b*, in connection with the oscillating frame or walking beam B, and frames F F, all arranged to operate in the manner substantially as and for the purpose set forth.

Second, the combination of the jaws A A, oscillating frame B, and the wheels *f f*, for securing the upper ends of the jaws in the frame as herein specified.

No. 52,838.—Elias T. Ford, Stillwater, N. Y.—*Machine for Pressing Straw.*—February 27, 1866.—This invention consists in a peculiar mechanism so as to embrace and retain each extremity of a gavel of straw or like material, and pressing the same by twisting the gavel

and holding the straw in a compressed state by running a continuous band around the gavel spirally and reversely to the twist thereof, and the gavel is secured at each extremity by tying the band.

Claim.—First, the compression of a gavel of straw or other material of like fibre, forming a bundle or bale, by twisting and holding the same in place and winding it spirally in an opposite direction to that of the twist with a twisted band *t* of straw or similar material, formed separately and rendered from the spool J before the gavel is relieved from its end gripes X Y X Y, substantially as described.

Second, the arrangement of tubular centres E E, tension shafts F F, gear D D, pinions *n n*, gear *h h h h*, wrists X X X X, bearings *r r r r*, cords or chains *y y y y*, hooks *a a a a*, guard plates C C, and sectional frames B B B B, resting upon base frame A, substantially as and for the purpose specified.

Third, the employment of the ratchet of the left gear D with catch Z and spring W for holding the centre E, and therewith the left extremity of gavel *t* in its compressed state, while motion is imparted to the right centre and gavel in the application of band *t*, substantially as described.

Fourth, the arrangement of the rear driving shaft N with the right and left clutches *b b* S, pinions G G G, levers R R, connecting rod *m*, pivots T T, right pulleys P P^4, substantially as and for the purpose described.

Fifth, the arrangement of the lower and stationary arms L L^7, upper concave L^3 L^3, and rod b^2, hinged in the bar Q Q, in combination with standards K^5 K^5, having the upper centre and spool J mounted thereon, in the manner and for the purpose set forth.

No. 52,839.—JOHN E. FORD, Memphis, Tenn.—*Hose Coupling.*—February 27, 1866.—This invention consists in the arrangement of a sleeve for drawing the two sections of a pipe firmly together, operated by a ring having a double cone-shaped end, which bears against a shoulder on the sleeve, and lugs upon one of the sections.

Claim.—The sleeve D, provided with longitudinal slots *c c*, and fitted on the butt A, as shown, in combination with the projections *e e* of the butt A′, the ring E having grooves *d d* in its surface, provided with bevelled or oblique projections *f f* at its rear side, and fitted on the sleeve D, substantially as and for the purpose herein set forth.

No. 52,840.—JOHN W. FREE, Richmond, Ind.—*Fanning Mill.*—February 27, 1866.—This invention consists in providing for the adaptation to ordinary fanning mills an adjustable shoe, so constructed that it may be fitted to the ordinary size of fanning mills, and thus give to them the advantage of better motion and more screens than usually given.

Claim.—First, the adjustable slotted hinge A when used for the purposes and in the manner set forth.

Second, the adjustable sides C C, in combination with the slotted shoe bottom B, bar L and strap B′, all constructed and arranged substantially as and for the purposes set forth.

Third, the notched bearing D, in combination with the notched plate E, when used, as and for the purposes set forth.

Fourth, the combination of the slotted hinge A and the slotted suspending straps F F with the adjustable shoe, substantially as and for the purposes set forth.

Fifth, the adjustable grooved grain board J, in combination with the sides C, substantially as and for the purposes set forth.

Sixth, the combination of the dovetailed groove bar G with the dovetailed fan door H and wind hole I, substantially as and for the purposes set forth.

No. 52,841.—JOHN W. FREE, Richmond, Ind.—*Grain Separator.*—February 27, 1866.—This invention consists in the employment of a rack on each side of the separator having notches therein, and by which means the shoe is made adjustable; and it also consists in connecting the above with a bell crank and double hinge, through the medium of which the shoe is given a longitudinal and vibratory motion. It also consists of a lever, working in connection with the screens, which gives them a vertical motion.

Claim.—First, the combination of the cam A, bar D, door C and cleat B, when used in the manner and for the purpose set forth.

Second, the double hinge Y when used in the manner and for the purpose set forth.

Third, the hook-shaped ratchet K, in combination with the suspending rods *v* and the shoe, when used as and for the purpose set forth.

Fourth, the bell crank J, in combination with the double hinge Y, when used to give a longitudinal as well as transverse vibration to the shoe, thus producing a rotary or circular motion by means of a rod attached, substantially as and for the purpose set forth.

Fifth, the foot *m* of the frame, in combination with the feet upon the other end, substantially as and for the purpose set forth.

Sixth, the rocking lever R S, in combination with the shoe and screen *x*, when employed substantially as and for the purpose set forth.

Seventh, the wind guide P, in combination with the spring bolt Q, substantially as and for the purpose set forth.

Eighth, the box T, in combination with the shoe, when constructed and used substantially as and for the purposes set forth.

Ninth, the adjustable corrugated plates U and G, constructed and used substantially as and for the purposes set forth.

No. 52,842.—NORMAN T. and SILAS B. GASSETTE, Chicago, Ill.—*Cigarette Mould and Box Combined.*—February 27, 1866.—This invention consists in the combination of a tobacco box, match box, and cigarette mould.

Claim.—First, the combination of match box, tobacco box, and cigarette mould.

Second, the clamp, with projections for fastening wrappers to the top of the mould.

Third, the complete cigarette mould as made by the combination of its parts, represented by figures 5, 10, and 9, all substantially as described and for the purposes set forth.

No. 52,843.—DANIEL D. GITT, Arendtsville, Penn.—*Harvester.*—February 27, 1866.—This invention relates to the particular construction of the connections of the pitman with the crank arm and sickle bar, by which the latter is permitted to conform freely to inequalities in the surface of the ground, in the direction of its length, or to rock or roll in the direction of the path of the machine without in any way binding or cramping the same, or interfering with the proper working of the cutters in any position they may assume.

Claim.—First, the combination of the jaws *b' b'* which have a place between them so as to allow side play of the pitman rod, and prevent up and down play thereof with the ball and socket joint *a* B', substantially in the manner and for the purpose described.

Second, connecting the lower end of the pitman rod A to a reciprocating slide C, which is allowed to rock about a vertical pin *g* that connects said slide to the sickle S, substantially as described.

Third, the combination of the horizontally oscillating slide C with its upper and lower bearings D' D, and the elevated guide *g* or the sickle, substantially as described.

Fourth, the combination of a jointed pitman A B' and an oscillating slide which is supported upon bearings arranged above the plane of the sickle, substantially as described.

Fifth, pivoting the sickle bar of a harvester to a reciprocating slide C, substantially as described.

No. 52,844.—JAMES GOULD, Lexington, Mass.—*Fertilizer.*—February 27, 1866.—This invention consists in mixing with the refuse lime from gas works animal and vegetable matter, such as blood and sumach, and then adding to the mass a quantity of lime and common salt, after which the mass is softened and moistened with crude ammonia and tar water from the gas works, after which it is ready for use.

Claim.—The process of formation of a fertilizer by fermenting mixtures of gas-lime, salt, and animal and vegetable or vegeto-animal matter, as above described.

No. 52,845.—JOHN C. GRÜN, Peoria, Ill.—*Edge Plane for Boots and Shoes.*—February 27, 1866.—This invention consists in the combination of a metallic box, a metallic block, a plane bit, and a curved handle.

Claim.—The metallic box A, the metallic box C, the plane bit O, the screw D, and the curved handle B, arranged substantially as and for the purpose herein set forth.

No. 52,846.—EDWARD HAMILTON, Chicago, Ill.—*Amalgamator.*—February 27, 1866.—This invention relates to certain improvements upon the patent granted to W. M. Fuller, January 2, 1866, and consists of an amalgamating vessel to which a cover is hermetically secured. Through the cover passes a conical tube, the upper end of which is provided with a funnel-shaped hopper, and the lower end with a deflector, to prevent the ore from adhering to the sides of said tube. There is an annular receiver secured to the conical tube, and communicating with the boxes by means of tubes; the space between the outer shell and the vessel also communicates with the boxes, by means of the tubes. The said tubes are provided with valves to cut off the communication between the vessel and boxes.

Claim.—In apparatus for extracting gold and silver from auriferous and argentiferous ores, operating substantially as herein described, the arrangement of the annular receivers, discharge pipes, and receiving boxes, as and for the purpose herein set forth.

No. 52,847.—JOHN HANLON, Newark, N. J.—*Sewing Machine.*—February 27, 1866.—This invention relates to the take-up device, the means for operating the shuttle driving shaft, means for adjusting the parts of the face plate which sustains the needle bar, means for driving the needle bar and adjustment for the wear of its cam groove and pin, and to the details in the construction of the shuttle.

Claim.—First, the arrangement of the lever A, having its perforated short arm A' behind the fulcrum *l*, the fixed perforated arm B, the spring C, and standard D, as herein described and represented.

Second, the described arrangement of the needle bar E, parts F F', for forming the adjustable groove *e*, the disk *b*, crank pin N, and driving shaft *s*.

Third, securing the needle bar in place by means of plates whose adjacent faces are joined by a tongue and groove, the needle bar being guided partly by recesses made in the ends of the brackets *p p*, and partly by shoulders on the said plates, substantially as shown.

Fourth, the manner here shown of driving the shuttle rock shaft, to wit, by means of the gear wheels O O′, short shaft *t*, crank wheel P, pitman Q, and vibrating arm R, as described,

Fifth, the combination of the shuttle U, bobbin V, socket W, axle X, and opening or groove *y*, said parts being constructed in the manner and for the purpose herein specified.

No. 52,848.—O. J. HARDGROVE, Canton, Ohio.—*Car Brake.*—February 27, 1866.—This invention consists of a car or wagon brake constructed with two pivoted shoes, each having a side clamp, which shoes and clamps, when the brake is applied, grasp the wheel, and which, when the brake is relieved, are thrown forward and outward by means of a spring of rubber and metal.

Claim.—First, constructing a car or wagon brake of two pivoted shoes B B′, which are provided with side clamps *a a*, and acted upon by means of a spring *g*, or its equivalent, substantially as described.

Second, the construction of each shoe B B′ with a side clamp formed on it, substantially as described.

Third, the combination of the T head rubber spring *g*, and a coiled spring surrounding its neck, when these parts are applied to a two-part car brake which is constructed substantially as described.

No. 52,849.—GEORGE HASTINGS, Waltham, Mass.—*Watch Hand.*—February 27, 1866.—This invention consists in striking up all the parts from one piece of metal by means of dies, thus causing the socket tube to be in one piece of metal, with the ring and finger.

Claim.—The hereinbefore described improved manufacture of watch or time-piece hand, having its socket tube, its head and finger, formed in one piece of metal, substantially as set forth.

No. 52,850.—JOSHUA HANDY, San Francisco, Cal.—*Gold and Silver Washing Apparatus.*—February 27, 1866.—This invention consists of a frame supporting an upright shaft, to which is keyed a pan having a convex bottom with apertures in its centre. A hub is also keyed to said shaft and provided with metallic spokes which are coated with mercury. A distributor, to which is attached a hopper suspended over the pan, has guide fingers attached to its sides. The said distributor may be elevated by means of a rope and arms.

Claim.—First, the guide fingers T T, attached to distributor G, working in slides U U, or their equivalent.

Second, the riffle bars R R, coated with mercury, for the purpose as herein set forth.

Third, the riffle bars R R, guide fingers T T, and slides U U, in combination with distributor G, and pan B, with convex bottom, and central outlets *e e*, substantially as described and for the uses and purposes as hereinbefore set forth.

No. 52,851.—BENJAMIN HESS, Manor Township, Penn.—*Harvester.*—February 27, 1866.—This invention relates to that class of machines employing what is called the endless chain cutter, and consists in the particular construction of the cutter whereby it is made to form in itself a link of the chain, provided with shoulders which serve to guide, and with cog teeth through which motion is communicated to the cutters by notched wheels.

Claim.—The construction of the cogged cutters E′ F, substantially as specified, so that they form in themselves the links of an endless chain cutter, when said cutters are used in combination with the notched pulleys A^1 A^2, arranged and operating as described.

No. 52,852.—WM. H. HOVEY, Springfield, Mass.—*Brick Machine.*—February 27, 1866; antedated February 16, 1866.—This invention consists of two sets of horizontal channels in which plungers work by a cam, and force the clay received from a hopper into a contracted portion of the channels, thus pressing it. As it is forced out of the front it is cut to the desired form by cutters working vertically in front of the hopper, and falls on an endless apron in the form of brick.

Claim.—First, the combination of the cam L, knee-joint levers G H and G′ H′, connection B, and plungers F F′, when used in combination with a suitable feeding apparatus and frame, substantially as described.

Second, the combination of the cam T, one or more levers S S, suitably connected; these one or more cutters O P, and a similar number of boxes or channels *l l*, through which the clay is forced, substantially in the manner and for the purpose described.

Third, the combination of the cam T, lever or levers S S, connecting rod or rods *v*, one or two pawls W and ratchet X, and the roller U, substantially in the manner and for the purpose described.

Fourth, contracting the channels *l l′* at the front, substantially as described.

Fifth, the combination of the pieces Y Y, rods *y y*, and spring Z, with the channel or channels *n o*, substantially as described.

Sixth, combination of the hopper B, having the opening or openings *e f* in its bottom, with

the channel or channels *l' l'*, and a suitable arrangement for forcing the clay along this channel or channels, and for cutting off and removing the same when formed into bricks, substantially as described.

Seventh, forming the channel or chamber *l* in such a manner that when the plunger reaches the front end of the opening *e f*, there shall be sufficient clay in the space between the front end of and the point to which it must travel to form the amount of brick required, substantially as described.

No. 52,853.—BENJ. J. C. HOWE, Syracuse, N. Y.—*Mode of Sinking Wells.*—February 27, 1866.—This invention consists in sinking wells by means of a hollow tube, to the bottom of which is attached a point, containing an opening in its bottom smaller than the internal opening thereof, made in this manner to prevent clogging. The upper end of the tube is capped, so that the ends thereof may not be injured by blows imparted to it by a weight used to drive the same into the ground. When water is reached by this operation, this tube is withdrawn and another well-tube inserted in its place.

Claim.—First, a tube to be used in sinking wells, when a point or foot F is thereunto attached, constructed and operated substantially as herein set forth and described.

Second, in a pump and well-tube, the adjustable sections A A, in combination with the bars B B, and pins *e e*, when constructed in the manner and for the purpose herein described.

No. 52,854.—E. B. HUNGERFORD, Elmira, N. Y.—*Window Blind.*—February 27, 1866.—This invention consists of glass slats for window blinds, pressed in a mould with journals on either end, the glass to be of any desired color or shade to suit the taste, and operating as a ventilator.

Claim.—A window blind or ventilator slat constructed of glass, of any desired color, having the journals C formed thereon solid with the body of the slat, as and for the purposes set forth.

No. 52,855.—Cancelled.

No. 52,856.—A. JEFFERY, New Haven, Conn.—*Coal Hod.*—February 27, 1866.—In this invention, to the superior end of the frustum is attached a cup-shaped end; the inferior end is open to answer for a spout; on the upper side, and near the larger end, is an aperture provided with a hinged cover; a bail and base complete the device.

Claim.—A closed coal hod, constructed substantially in the manner as herein set forth.

No. 52,857.—ALBERT D. JUDD, New Haven, Conn.—*Tassel Hook.*—February 27, 1866.—This invention will be understood by reference to the claim.

Claim.—The tassel hook having the ornamental metallic washer secured to the surface of the porcelain knob by the end of the metallic arm, as a new article of manufacture.

No. 52,858.—L. KING, East Cleveland, Ohio.—*Water Drawer.*—February 27, 1866.—This invention chiefly consists in the guides and stops, together with lugs and arms, by which a leverage is obtained for rendering the tilting of the bucket more easy.

Claim.—The lugs *c*, and arms *d*, arranged in relation to the bail *a*, and in combination with the stops D, and with or without the guide D', as and for the purpose set forth.

No. 52,859.—JAMES S. KINGSLAND, Stryker, Ohio.—*Car Wheel.*—February 27, 1866.—This invention consists in casting a car wheel in three separate pieces, consisting of the rim and two side plates, and securing the same together by means of bolts, whereby the rim of the wheel, when worn by use, may be readily replaced by a new one.

Claim.—A car wheel cast in three separate parts, secured together as described, and consisting of the side pieces B C, whose central enlargements form the hub for the spindle and whose outer margins embrace and are bolted to the inwardly projecting flange of the rim A.

No. 52,860.—MARTEN KREMSER, Cleveland, Ohio.—*Bridge.*—February 27, 1866.—This invention consists in connecting the main and counter braces of a bridge to the upper and lower chords, the entire bridge being made of rolled iron put together without forging.

Claim.—Connecting the chords or arches of bridges to the posts B', when constructed and arranged substantially as described, and shown in Fig. 6, for the purpose specified.

No. 52,861.—HENRY B. LANSING, Hudson, Mich.—*Corn Planter.*—February 27, 1866.—This invention consists in the manner of attaching the rear extension piece to the tooth, so that the saw may be held a certain depth in the ground by means of a roller and weight. It also consists in attaching the stalk-cutter to the planter, and connecting the slides to the same by means of a compound lever, by which the dropping of two rows of corn at a time is accomplished.

Claim.—First, the rear extension, F, of the tooth D, for the purpose of retaining the tooth

a certain depth in the ground, whether hard or mellow, by means of the roller and weight applied to said extension F.

Second. the manner of attaching the stalk-cutters to a wheel planter, in the manner and for the purpose set forth.

Third, the compound lever B B, in connection with the feed bar A A, and the rod *c c*, arranged in the manner and for the purpose substantially as set forth.

No. 52,862.—C. W. Le Count and Samuel Chard, Norwalk, Conn.—*Lamp-wick.*—February 27, 1866.—This invention consists in making wicks for lamps of woollen cloth or wool.

Claim.—A lamp-wick composed of wool, as a new article of commerce, substantially as described.

No. 52,863.—Alfred and Edwin Lister, Newark, N. J.—*Deodorizing Offal.*—February 27, 1866.—This invention consists in passing the products of combustion from the furnace into a chamber, and from thence up through the perforated partition into a chamber containing the offal. The gases and vapors arising from the offal are carried into the furnace by means of a pipe, which terminates under the grate. The fans may be attached to the pipe in order to force the gases into the furnace.

Claim.—First, treating offal, for the purpose of utilizing it, according to the process above set forth, to wit, subjecting the offal to currents of hot air and gases in closed chambers, and at the same time discharging into the furnace which supplies such currents the gases, vapors, and exhalations which are driven off from the offal, substantially as shown.

Second, the arrangement, substantially as above shown, of ovens, air-receiving chambers, and pipes leading into and out of the same, with or without a system of fans to quicken the circulation of the in-going and out-going air and gases.

No. 52,864.—Joseph Loch and George Bayer, New York, N. Y.—*Lock.*—February 27, 1866.—In this lock there is a series of three circular cogged tumblers upon a pin projecting from a vertically sliding plate, which tumblers are raised up and made to gear with a series of three cogged wheels placed centrally in line with the arbor of the knob, said wheels being operated in succession, each to set its corresponding tumbler by said arbor, as the latter is by degrees pushed further into the lock. The tumblers gear with the wheels only when the bolt is in a projected state, the outward movement of the latter, through the medium of a bell crank lever, serving to raise the sliding plate until the two series gear, and at the same time release the tumblers from the stump. The stump is on the end of a pivoted lever, which is caused to rise at its forward end and be correspondingly depressed at the opposite end—that, viz., from which the stump projects—by a stub projecting from a lateral arm of the bolt, which, as the bolt moves forward, strikes against an inclined surface of said lever, and thus raises it up until the end of the lever enters a notch in the bolt, and thus prevents the bolt from being retracted until the tumblers, which are supposed to have been disarranged after locking, shall have been reset, so that the stump may enter their notches.

Claim.—First, a key composed of a series of notched disks *a*, and operating in combination with the handle C, the lip *d*, or its equivalent, the sliding shaft B, cog wheel G, bolt H, pulley F, tumblers E, and notched cog wheels J, substantially in the manner and for the purpose set forth.

Second, the dog *l* in combination with the rising and falling slide I and bolt H, constructed and operating substantially as and for the purpose described.

Third, the cam *q* on the arm *r*, in combination with the stop lever L, knife K, and ratchet wheels J, constructed and operating substantially as and for the purpose specified.

No. 52,865.—John L. Lovett, John Wippich, and James Wood, Salem, Mass.—*Burial Case.*—February 27, 1866.—This invention consists in placing a cross brace or support under the cover or lid of a coffin in such a manner as to strengthen the case, and so that a plate attached to the upper surface of said support may be seen, when the coffin is closed, through an aperture in the lid.

Claim.—The support *c* placed under the lid or cover and let into the sides, substantially as and for the purpose set forth.

Also, the employment of the upper surface of this support for attachment of a plate, substantially as shown and described.

Also, constructing the lid with an opening in such manner that such opening shall come respectively over a plate placed upon the support when the lid is closed, and over a plate placed upon the cover when the lid is thrown back, substantially as described.

No. 52,866.—James H. Luther, Petroleum Centre, Penn.—*Oil Well Tube Extractor.*—February 27, 1866.—This invention consists of a device having external griping teeth, and is inserted into the tube near its bottom, said device being constructed in sections. The rod extends in sections to the top of the well, and by means of a collar the pipe is bound together by this rod, so that the power to raise the tube may be applied directly to it.

Claim.—A griping and lifting mechanism, constructed and operating substantially in the manner described.

Also, in combination with a mechanism which can be inserted within and made to gripe one of the tubes, a means of locking the rod of such griping mechanism to an upper tube, for the purpose of clamping or tying several tubes or sections together, whereby the lifting power may be applied to the upper end of the tubing itself, as set forth.

Also, separating the sections as described, and shortening up the rod A, as and for the purposes described.

Also, the construction of the griping mechanism, as specified, with sufficient play to jaw *m*, and with a removable jaw *l*, whereby the whole may be readily removed at pleasure, as hereinbefore set forth.

Also, the employment of collars or dogs *e* and *f*, in combination with serrated wedges *g* or *h*, substantially as set forth, as a means of affording a ready application of the lifting machinery to the tubes.

No. 52,867.—DAVID LYMAN, Middlefield, Conn.—*Clothes Wringer.*—February 27, 1866.—The object of this invention is to provide for the movement of the axis of one or both of the rolls without necessitating any movement of the axis of the shaft from which the rotary movement is derived, and without requiring the increased length which would be necessary with a duplication of ordinary universal joints, or any ordinary coupling.

Claim.—First, the spurred piece N′ in combination with the wheels M and C′, or the equivalents thereof, arranged relatively thereto, and to the rolls of clothes wringing and washing machines, substantially as herein set forth.

Second, the employment of one or more spurs on the opposite faces of the piece N in combination with the perforations *m* and *c*, and with the working mechanism of clothes wringing and washing machines, substantially in the manner and for the purpose herein set forth.

No. 82,868.—VIRGIL H. LYON, Plainfield, Ind.—*Device for Boring Wells.*—February 27, 1866.—This invention consists of a conical screw mole attached to a shaft, which is coupled in sections, and by suitable machinery the mole is bored into the earth. The mole shafts will carry with them the tubing which is to form the wall of the well, and the mole can be separated after having been sunk to the required depth, and will draw out through the tube.

Claim.—First, the conical screw mole A, shaft *c*, connecting chains *d* and *d′* C P B, clamp N, and cord or chain R, when constructed, arranged, and operated in the manner and for the purpose substantially as set forth.

Second, the table E, wheels F and G, pinion H, posts O, friction rollers *s* and *v*, and windlass I, when constructed, arranged, and operated in the manner and for the purpose substantially as set forth.

No. 52,869.—JAMES MACDONOUGH, New York, N. Y.—*Manufacture of Ink for Printing Postage Stamps.*—February 27, 1866.—This invention consists of an ink composed of any suitable coloring material combined with gelatine and glycerine. The ink so formed is readily dissolved by water and chemical agents, and is suitable for plate printing.

Claim.—First, a sensitive and soluble printing ink adapted for both plate and surface printing, made with glycerine, for the purpose of printing postage and other stamps, and preventing the fraudulent removal of cancelling marks, substantially as herein set forth.

Second, glycerine in combination with gelatine, or an equivalent material, adapted to reduce the solubility of ink made therewith, substantially as and for the purpose herein set forth.

No. 52,870 —JAMES S. MCCURDY, Bridgeport, Conn.—*Guide for Sewing Machines.*—February 27, 1866.—The object of the adjustable roughened roller is to correct the tendency of the cloth either to hug the guide too closely or to run away from it, as the case may be, by reason of the needle not being properly set, and especially where curved needles are used.

Claim.—First, the guide wheel *x* turning upon a pivot *e* at the end of an elastic arm or spring *c*, and applied to the sewing machine, substantially as herein specified.

Second, the straight-edged smoothing piece *m* applied in connection with the elastic arm or spring *c*, and in relation to the wheel *x*, substantially as herein described.

No. 52,871.—JOSEPH E. MERRITT, Winn, Maine.—*Machine for Rolling up Leather.*—February 27, 1866.—This invention consists of a machine for rolling leather into a cylindrical form to adapt it for transportation, and after such roll has been made and tied, the parts are capable of being so disposed as to permit said roll to be readily removed from the machine.

Claim.—First, a machine for rolling up leather, constructed substantially as described.

Second, the combination of the belts U with the rollers E and J in a machine for rolling up leather, substantially as described and for the purpose set forth.

Third, the combination of the roller L with the belts U, substantially as described and for the purpose set forth.

Fourth, the combination of the pawls F and racks G with the roller E, for the purpose of

holding the said roller forward while the belts are being removed and replaced, substantially as described.

Fifth, the combination of the racks M, pinion wheels N, ratchet wheel R, and pawl S with each other and with the roller L, substantially as described and for the purpose set forth.

No. 52,872.—WILLIS W. MILDRUM, East Berlin, Conn., assignor to J. and E. STEVENS & CO., of Cromwell, Conn.—*Toy Whistle and Engine.*—February 27, 1866.—This invention of a toy engine and whistle consists of a wheel secured to a handle, and by turning or rolling it on the floor, by means of connecting rod and pitman, a piston is reciprocated in a cylinder whistle, likewise secured to the handle, and the whistle will be blown or music emitted therefrom.

Claim.—The whistle cylinder *d*, in combination with the piston *e* and its connections *i m*, wheel *b*, and handle *a*, constructed substantially in the manner as and for the purpose described.

No. 52,873.—JOSEPH MILLER, Boston, Mass.—*Street-sweeping Machine.*—February 27, 1866.—This invention consists in an arrangement of devices whereby the brushes are so arranged that coarse as well as fine dirt can be taken up and deposited in the cart. The brushes are so formed that they will adapt themselves more readily to varying surfaces. The brushes are hung in adjustable slotted bars, so that as they become worn away, they can be lowered sufficiently to compensate for their wear.

Claim.—First, arranging the brushes in their sections at angles to each other so as to extend from their frames in different directions, whereby, when they strike the surface to be swept, they expand and spread out over a wider surface than they otherwise could.

Second, hanging the endless brushes or their frames in adjustable slotted bars, so as fast as they become worn they can be lowered sufficiently to compensate for their wear.

Third, the arrangement of the double levers *y y*, operating on the tail piece or hood *c c* of the cart, substantially as described.

No. 52,874.—GEORGE MILSOM, Buffalo, N. Y.—*Tackle Block.*—February 27, 1866.—This invention consists in forming a journal bearing in the iron strap of the block for the shaft of the sheave to run in, and making the sheave fast to the block by means of bush pieces.

Claim.—First, the combination of journal bearings formed in the iron straps B and projecting hub G, with a sheave, H, made fast on the shaft I, for the purposes set forth.

Second, making the sheave fast to its axle by means of the bush or fastening pieces J J′ and pin L, for the purposes and substantially as set forth.

No. 52,875.—DANIEL MINTHORN, New York, N. Y.—*Desulphurizing and Disintegrating Ores.*—February 27, 1866.—This invention consists of a furnace containing a receptacle for the material to be treated in a distinct and separate one from the one in which the heat is generated, but which is connected by such a chamber with passages which may be opened and closed by dampers, as the various stages of the process may require, and so that the escaping products of combustion and gases may be thrown into and amongst the material to be treated, or pass through a separate and distinct exit flue into the chimney.

Claim.—The use of uncombined hydrogen at a high temperature, for the purpose of deoxidizing, desulphurizing, and disintegrating mineral ores by applying steam, either with or without the products of combustion, through a chamber containing iron turnings or other suitable absorbent of oxygen, in the manner substantially as herein set forth.

No. 52,876.—H. B. MYER, Cleveland, Ohio.—*Machine for Charging Air with Hydrocarbon Vapors.*—February 27, 1866.—In this machine a vessel is partly filled with light hydrocarbon. Near the bottom of the vessel is a coiled perforated pipe; and above the coiled pipe are two perforated disks, the upper one being connected at its centre with a tube, which is a branch of the tube leading to the perforated coil. Air is made to enter both the coil and the disk by means of an air pump operated by clock-work; another vessel similar in construction is filled with proof spirits and lime, and is used to pump the gas from the tank. The vapor-charged air passes to the holder. A lever is so arranged that when the holder is full of gas, one end of the lever is made to arrest the working of the air pump by catching in the ratchet wheel.

Claim.—First, charging and saturating atmospheric air with the vapor of the light hydrocarbon oils, substantially as and for the purpose herein set forth.

Second, for the accomplishment of this object, the perforated coiled tube C in the bottom of the tank A, as and for the purpose specified.

Third, in combination with the perforated tube C, the perforated disk D, for the purpose of more perfectly diffusing the air through the oil, as set forth.

Fourth, in combination with the coiled tube C and perforated disk D, the double convex disks *d* and air pipe E, as and for the purpose specified.

Fifth, the tank H, when provided with the perforated pipe I′ and perforated disk J, as and for the purpose specified.

Sixth, washing the gas through a bath of water, spirits, or lime water, either separate or combined, as and for the purpose herein set forth.

Seventh, regulating the working of the air pump G by the movement of the gas holder L, the lever R and wheel Q, or their substantial equivalents, as specified.

No. 52,877.—C. W. NEWTON and O. G. NEWTON, Edinburg, Mo.—*Treating Flax, Cotton, &c.*—February 27, 1866.—This invention consists in the combination of a picking apparatus, ginning apparatus, and feeding apron, in such a manner that the motion is communicated to all by means of a treadle.

Claim.—The combination on the same bench, for family use, of a picking apparatus, a ginning apparatus, a feeding apron, and a spinning apparatus, all driven from the same treadle motion, substantially as described.

No. 52,878.—TERTIUS S. NORTON, Chicopee, Mass.—*Process for Steel-facing Vices.*—February 27, 1866.—This invention consists in a process of steel-facing vices, by first brazing the steel part to the iron, then filing and dressing the steel to the proper finish, then clamping the two together so securely that the brazing metal will be retained between them when heated a second time for tempering the steel jaw.

Claim.—The combination of the two processes of brazing and hardening the piece of steel or facing with that of so firmly holding the facing piece of steel to the iron while the hardening process is being carried on, as to prevent the displacement or escape of the brazing metal from between the contiguous surfaces against which it may be.

No. 52,879.—CHARLES PERLEY, New York, N. Y.—*Bedstead.*—February 27, 1866.—This invention consists in uniting the side rails to the posts by vertical slip hinges, formed by eyes and vertical L-shaped irons, so that the foot of the bedstead can be moved without disturbing the other end, the side rails swinging into a less diagonal position.

Claim.—First, connecting the side rails and posts by hinges having a vertical hook or pin, so that the side rails can swing horizontally upon such hinges, substantially as set forth.

Second, connecting the head or foot guard to the post by means of hooks and eyes fitted substantially as specified, so that said foot or head board can be turned into a horizontal or an inclined position as set forth.

Third, the slats *h* and eyes *i*, in combination with the hinged side rails *b b*, as specified.

No. 52,880.—WILLIAM E. PRALL, Knoxville, Tenn.—*Cotton Picking Machine.*—February 27, 1866.—This machine consists in the employment of revolving cylinders attached to the perimeter of a large wheel. The cylinder is composed of a round brush with journals upon which the band works and causes them to revolve, so as to catch the cotton as they come in contact with the bolls. A toothed arc is arranged on the end of the shaft so as to reverse the motion of the cylinder after they come from under the band.

Claim.—First, the revolving cylinders or shafts N, figure 4, covered with a tenacious substance to attract and wind the cotton from the bolls.

Second, the revolving wheels A, upon which the cylinders or shafts are attached.

Third, the arrangement of a toothed arc *m*, for reversing the motion of the cylinders and unwinding the cotton.

No. 52,881.—NELSON READ and G. W. WYCKOFF, Syracuse, N. Y.—*Sewing Machine Shuttle.*—February 27, 1866.—In this invention a lever is so bent and placed within the shuttle, that one end bears upon the bobbin thread, whilst its other end bears against a spiral spring, which presses a sliding bearing against the axis of the bobbin. The diminution of the thread relieves the pressure of the lever upon the spring.

Claim.—First, the lever C or its equivalent applied to a shuttle in connection with a spring to act on the centre or axis of its bobbin, so as to make pressure thereon in proportion to the fulness of the bobbin for the purpose of regulating tension on the bobbin thread, substantially as shown.

Second, in combination with the lever C, the spring H, and the adjusting screw E, applied to the bobbin of a sewing-machine shuttle, substantially as shown.

No. 52,882.—RICHARD REDFIELD, Salem, Ind.—*Cleaning Grain.*—February 27, 1866.—This invention consists in a machine for separating sound grain from impurities by subjecting the grain to the action of an inclined oscillating trough having a roughened bottom surface, the effect of which is to toss the grain and trash in a direction at right angles to the line of its descent, and cause the substances which are lighter than the sound grain to arrange themselves in the centre of the said trough and on top of the sound grain, in which condition they are moved downward and brought under the influence of a strong suction of air rising through a pipe, which conducts them out of the machine.

Claim.—First, an inclined laterally oscillating trunk C, constructed with a roughened bottom for separating foreign substances from grain, substantially as described.

Second, providing an oscillating separator C with an elevation *g* and a suction spout B′, substantially as described.

Third, the combination of the side discharge openings *f f* with an intermediate suction spout B′, substantially as described.

Fourth, the inclined spout D, in combination with an inclined laterally oscillating trunk or separator C, having side discharge openings *f f* for the sound grain, and a suction spout B′, substantially as described.

Fifth, the combination of the hopper A, suction spout B′, substantially as described.

Sixth, arranging the suction spout B′ so as to communicate with the upper and lower ends of the oscillating separator C, substantially as described.

Seventh, providing the means herein described for conducting the grain from the separator C backward and delivering it into a smut mill, which consists of a flanged cylinder F and a spiked concave *i i*, said mill communicating through a chamber H with the fan case, substantially as described.

Eighth, the slotted concave K K, in combination with a suction chamber H, substantially as described.

Ninth, the combination of the suction spout K and suction chamber H with the smut mill, substantially as described.

Tenth, the arrangement of the wire-cloth screen *l* outside of the slotted concave K K, substantially as described.

Eleventh, the combination of the fan-case J, air chamber H and smut mill, arranged and communicating with each other, substantially as described.

Twelfth, the valves *s′ t′*, arranged in the suction spout B and in respect to the branch spout B^2, substantially as described.

No. 52,883.—T. K. Reed, East Bridgewater, Mass.—*Machine for Dressing Heel Faces of Boots and Shoes.*—February 27, 1866.—This invention will be understood by reference to the claims and engravings.

Claim.—The combination of the rotary reducing disk wheel and a means of presenting the face or tread of the heel to the action of said reducing wheel, and for permitting it to be moved across the face of the wheel from the perimeter toward the centre, substantially as and for the purpose set forth.

Also, in combination with a reducing wheel, the burnishing or polishing wheel operating substantially as set forth.

Also, the employment of the guides for entering the "rand," insuring the parallelism of the face or tread of the heel to the sole.

No. 52,884.—George Rehfuss, Philadelphia, Penn.—*Apparatus for Securing Buttons to Fabrics.*—February 27, 1866; antedated February 16, 1866.—The object of this invention is to pass the rivet through the cloth without breaking the fibre. A rod with a tapering point is fixed in an upright position upon a table, and upon it is placed a sleeve held up above the point by a spring; when this sleeve is depressed it becomes a gradual enlargement of the pointed rod. The cloth is now drawn down, receiving the point and its enlarged shoulder, the latter being permitted to rise with the cloth; the rivet enters it from the rear, when the sleeve is withdrawn, leaving the cloth upon the rivet.

Claim.—The combination of the pointed rod *b*, the movable sleeve *c*, with its conical tube *d* and spring *e*, the whole being arranged and operating substantially as described.

No. 52,885.—George Rehfuss, Philadelphia, Penn.—*Apparatus for Securing Buttons to Fabrics.*—February 27, 1866; antedated February 16, 1866.—In this apparatus the male die being upheld by a spring is pressed down by a cam operated by a lever, the button being set in a female die, held under the vertical die by a spring. The cloth and rivet head are beneath the female die which is slotted to permit the neck of the rivet to pass out. The impression of the die is in a depression in the centre of the face of the button, where an ornamental appearance may be given to the neck of the button.

Claim.—The lever E, with its die G′, in combination with the frame A and rod C, the whole being arranged and operating substantially as and for the purpose specified.

No. 52,886.—James Richmond, Lockport, N. Y.—*Bran Duster.*—February 27, 1866.—This invention consists in applying an adjustable cleaning brush to the outside of the revolving bolting cylinder, and in contact with the bolting cloth.

Claim.—The outside adjustable cleaning brush E, in combination with a revolving wire-cloth cylinder D, arranged and operating substantially as and for the purposes set forth.

No. 52,887.—Benjamin S. Roberts, United States Army.—*Breech-loading Fire-arms.*—February 27, 1866.—A compound or jointed swinging breech piece lifting upward and forward over the rear end of the barrel is so arranged as to form a solid abutment against a rear shoulder in the stock in line with the axis of the barrel, while the cartridge is freely entered and withdrawn in a channel which guides it over the said resisting shoulder. The raising of the breech block sets the hammer at half-cock by means of a cam on the axis of the swinging breech, and when the breech is closed the full cocking of the hammer insures the safe locking of the breech.

Claim.—First, in a breech-loading fire-arm the cam *o*, so shaped and controlled that while it serves to fire the gun by means of its small projecting spur that strikes against the flange containing the fulminate when the breech piece is brought home to its seat, also half cocks the gun when the breech piece is swung upward after the gun is fired, and holds the breech piece in its forward position while the cartridge is being inserted in its chamber in the act of reloading, substantially as described.

Second, in a breech-loading fire-arm, the combination of the shoulder *v* and the pin *x*, by which the swinging breech piece, if not entirely in its seat, is brought home there in the very act of cocking the piece, and thus preventing an accidental discharge before the breech piece is securely locked, substantially as above described.

Third, in a breech-loading fire-arm, intended for cartridges with metallic cases, and having a swinging breech piece with an open space in rear of the chamber for the insertion of the cartridges and the extraction of the cases, the use of "ways" *b' b'*, in combination with the hook R, located between them, all substantially as and for the purpose described.

Fourth, in such breech-loaders the use of a cam S, operated by a secondary lever L, for the purpose of starting the brace B from its seat, as shown in figure 5, substantially as and for the purpose above described.

No. 52,888.—Morris Rosenthal, Philadelphia, Penn.—*Shirt-bosom Pattern.*—February 27, 1866.—To the material of which the bosom is to be made is applied a pattern in curved lines with the figures representing the number of inches marked at the ends of said lines at both sides, so as to enable the bosom to be cut and fitted to any required size.

Claim.—A shirt-bosom, whether attached to the shirt or not, on which is marked or affixed a graduated guide for cutting out the piece, all substantially as shown and described.

No. 52,889.—Rufus Rowell and Francis H. Briggs, Boston, Mass.—*Device for Holding Carriage Springs.*—February 27, 1866.—Upon the spring seat of a carriage or other vehicle are four flanges which fit in corresponding flanges in the sides. The spring and seat are bolted together so as to form a king bolt.

Claim.—First, the four flanges B B B B, on the spring seat A A, substantially as and for the purpose herein described.

Second, the four grooves *c c c c*, substantially as and for the purpose herein described.

Third, the bolting of the seat and spring together from E to E, and making a king bolt of the same, substantially as and for the purpose herein described.

No. 52,890.—Ira J. Ryerson, Pierceton, Ind.—*Churn.*—February 27, 1866.—This invention consists in the attachment to the lid of any common dasher churn of a mechanical arrangement by means of which the dasher is put in motion, and the length of the dash rod is readily adjusted to suit the depth of an ordinary churn by means of a thumb-screw.

Claim.—The arrangement and combination of the standards P and guide Q with the dasher rod B, and regulator G, substantially as described and set forth.

No. 52,891.—F. C. Schaefer, Dubuque, Iowa.—*Chess-board.*—February 27, 1865.—This invention consists in constructing a chess or checker board of uniform rectangular parts of equal dimensions, that the same may be folded and carried in the pocket, but which, when unfolded and in use, and is carried about, will not be deranged, but be securely held without clamps.

Claim.—A chess or checker board composed of four main parts A B C D, united together in the manner and for the purpose substantially as described.

No. 52,892.—Daniel Schuyler, Buffalo, N. Y.—*Organ, &c.*—February 27, 1866.—This invention consists in so constructing the keys that the volume of any note or notes can be increased by the movement of the key or keys, which have a longitudinal backward motion. Extra reeds are employed, that when the regular keys are pushed inward they will sound in combination with the front keys. The extra reed may produce the "tremolo."

Claim.—First, longitudinal action of the keys, they being so constructed that any one or more of them can be pressed back in the key-board at the pleasure of the performer, for the purpose substantially as set forth.

Second, the use of a stop, as shown in the drawing, or any equivalent method of causing the keys to move back in the key-board when the usual downward pressure is applied to the key, substantially as and for the purpose set forth.

Third, the use of valves to prevent the loss of air around the push-down pins when arranged substantially as herein described.

No. 52,893.—Wm. D. Seal, Washington, D. C.—*Manufacture of Illuminating Gas.*—February 27, 1866.—This invention consists in dividing the ordinary cylindrical retort into two compartments by means of a metallic partition, the upper compartment being filled with quick-lime, in order that the gas generated in the lower compartment in passing through the upper compartment may be purified before leaving the retort.

Claim.—First, the process herein described of passing the gas as generated over a mass

of quick-lime, when the gas is generated in the retort where the lime is placed, for it to pass through and be purified, substantially as set forth.

Second, the retort, constructed, arranged, and operating substantially as described, that the gas may be generated and purified in a single retort, as set forth.

No. 52,894.—THOMAS SHAW, Philadelphia, Penn.—*Power Hammer.*—February 27, 1866.—The principal feature of this invention consists in introducing a spring and belt between the hammers and piston, by which the strain on the piston is materially lessened, and the rebound of the hammer is taken advantage of in its upward movement.

Claim.—Constructing and operating a hammer in the manner described, evident equivalents included.

No. 52,895.—WILLIAM SHEDLOCK, ALFRED SHEDLOCK, and GEORGE MARSHALL, Brooklyn, N. Y.—*Stop Valve.*—February 27, 1866.—The object of this invention is to introduce a stop valve for use in faucets, hydrants, &c., in which the valve is inserted at right angles with the main pipe and attached to a horizontal plate sliding upon fixed bearings within the pipe. Upon this plate, and loosely connected therewith by a projecting pin, rests an eccentric cam, which serves to operate the valve by means of a rotating spindle inserted in the pipe and rigidly affixed to the cam.

Claim.—The valve D attached to a carriage B, sliding in a direction perpendicular to the valve seat on fixed bearings C C, and operated by a spindle G and cam E, applied and operating substantially as herein set forth.

No. 52,896.—DAVID SHIVE, Philadelphia, Penn.—*Photograph Printing Frame.*—February 27, 1866.—This invention consists in so constructing photograph printing frames that the operator can readily separate and close together the two plates, in examining the progress of printing, without any risk of disturbing the relative positions of the same in the frame.

Claim.—In combination with a frame having two parts hinged together, as shown, the slides B B′ and screws C C′, the same being constructed and arranged to operate together, substantially as and for the purpose described.

Also, the application of the side guides a^4 a^4 to one of the parts A or A′ of a photographic printing frame, so as to operate in the manner described for the purpose specified.

No. 52,897.—HENRY T. SLEMMER, Norristown, Penn.—*Manufacture of Lubricating Oil.*—February 27, 1866.—This invention consists in returning to the still the heavy products of the distillation of petroleum, and adding thereto a strong solution of caustic alkali, redistilling steam being introduced when the contents of the still are at or near the boiling point. The first products of the distillation are removed and the remaining distillate is received in the receiver. This is passed into the agitator in a hot alkaline solution, after which it is washed with hot water to remove the alkali. The oily product thus obtained is frozen to separate the paraffine and naphthaline, and the oil is strained from the crystallized product at a temperature from 26 to 40 Fahrenheit.

Claim.—The production of an oil of the gravity as herein set forth, and the rejecting of the first products of the distillate until it approximates thirty-eight degrees Baumé's hydrometer, and subsequent washing and treatment as described.

Also, as a new manufacture, the lubricating oil prepared substantially as described.

No. 52,898.—THOMAS J. SLOAN, New York, N. Y.—*Automatic Boiler Feeder.*—February 27, 1866.—The object of this invention is to feed steam generators with the requisite quantity of water automatically, by means of a pumping engine, the cylinder of which is surrounded by a steam chamber communicating with the boiler. Its novelty consists in the combination of the vessel, connected with a steam generator above the high and below the low water mark, with the throttle valve in the steam pipe leading from the boiler to the steam chest of the pumping engine. Also, in the devices for exhausting the steam actuating the steam valve of the engine, whereby to insure the proper working of the valve; and, also, in the mechanism enclosed in the steam-chest, and extending from the steam-chest into the cylinder of the engine, whereby to operate the valve by steam and give steam to the engine. The cylinder of the pumping engine is provided with a partition in the middle of its length, in combination with the two pistons on either side of the partition, and connected by a piston rod.

Claim.—The combination of the vessel to be connected with a steam boiler above the high-water mark and below the low-water mark, with the throttle valve in the pipe which conveys steam to the steam-chest of the pumping engine, the said valve being controlled by a float, the steam chest of a pumping engine for supplying the boiler, and the valve operated by steam and provided with an exhaust, substantially such as described, the combination being substantially such as described and for the purpose specified.

Also, the devices, substantially as herein described, for exhausting the steam which operates the steam valve of the engine, to insure the proper working of the valve, and prevent it from slamming, as set forth.

Also, operating the valve to take the steam by which it is shifted, to give steam to the

engine by the mechanism, substantially as described, enclosed in the steam-chest and extending from the steam chest into the cylinder of the engine, to be actuated by the piston, substantially as and for the purpose described.

Also, the cylinder of the pumping engine, with the partition in the middle of its length, in combination with the two pistons, one each side of the partition, and connected by a piston rod, substantially as described and for the purpose set forth.

No. 52,899.—AMOR SMITH, Sr., Cincinnati, Ohio.—*Press Plate.*—February 27, 1866.—This invention consists in constructing a press plate with perforations and ropes or cords, so as to prevent the spreading of the material while being pressed, and the bursting or tearing of the sacks, and also affording greater facilities for the escape of the oil from the mass along and around the cords.

Claim.—The press plate D, when constructed with perforations and having ropes E and F woven through the holes and along the faces of the plate, substantially in the manner and for the purpose set forth.

No. 52,900.—FREDERICK SMITH, Alleghany City, Penn.—*Lathes for Turning Ovals.*—February 27, 1866.—The object of this invention is to turn picture frames of an oval shape in outline, and it consists in forming a chuck-head of two plates, one of which is caused to slide on the other by means of a cam operating on the face plate with which it is in contact, so that as the face plate is revolved, causing it to carry the frame being turned and which is attached to the plate, to rotate the frame against the revolving cutters in such a form as to cut the oval desired.

Claim.—The arrangement of the frame bed composed of the plates K and C, adjustable cam 4, with its adjusting screw and stationary shaft *m*, said parts being raised and lowered by means of screw *r* and operated by pulley J, substantially as and for the purpose described.

No. 52,901.—HAMILTON S. SMITH, Gambier, Ohio.—*Microscope.*—February 27, 1866.—This invention consists in inserting movable reflectors into the tube of a microscope, so as to transmit light down through the lens on the object in such a manner that the light is condensed on the object to be viewed, and an object viewed as opaque will be illuminated for the microscope. A disk admits of the adjustability of the quantity of light to the instrument to suit the object to be viewed. A slide allows the revolving and transverse motion to the reflector.

Claim.—First, the use in a microscope of a reflector arranged above the object so as to condense the light through the lens on the object to be viewed, substantially as and for the purposes set forth, said light being taken from one side and not transmitted from below.

Second, the adjustable slide C, in combination with the reflector B and case A, constructed and operating substantially as and for the purpose described.

Third, the arrangement of the adjustable disk *h* of two or more holes of different sizes, in combination with aperture *g* in the case A, and the reflector B, constructed and operating substantially as and for the purpose set forth.

No. 52,902.—ALBERT SONNEKALB and JOHN W. LIEB, Newark, N. J.—*Carpet Bag.*—February 27, 1866.—This invention consists in the employment of hooks attached to the frame, and a bar around which the edge of the cloth is folded. The hem, containing the bar or rod, is placed within the hooks, which are then pressed, and thus the cloth is substantially secured to the frame.

Claim.—The hooks *a*, the hem *b*, and the rod *c*, in combination, substantially for the uses and purposes as above described.

No. 52,903.—T. A. STANSBURY, Saybrook, Ill.—*Plough.*—February 27, 1866.—This invention consists in the employment of a supplementary plough, and the attachment thereof in such a way that either a double or single plough may be used to suit the requirement of the operator.

Claim.—A supplementary frame, bearing a ploughshare, to be attached to the beam of an ordinary plough, substantially in the manner and for the purpose set forth.

No. 52,904.—E. H. STEARNS, Erie, Penn.—*Head Blocks for Saw Mills.*—February 27, 1866.—This invention consists in the use of supplemental knees connected with the main knees by means of winged arms, and in the use of graduated slides having notches and used in connection with stops or head blocks; also of an arc-shaped dog with a handle and pivoted to the knee, as a ready means of holding the log in contact with the knee.

Claim.—First, the employment or use of supplemental posts or knees G′, connected with the main posts or knees G by means of wings or arms H, arranged so as to form proper bearings for the log, cant, or timber throughout its entire length, substantially as and for the purpose specified.

Second, the pivoted dog, consisting of the arc-shaped bit *a* and the handled stock *b d*, constructed and operated substantially as described and represented.

Third, the pivoted or hinged bars J attached to the slides D, notched as shown, in connection with the stops *g* on the heads C, substantially as and for the purpose specified.

Fourth, the bars J, in combination with the gauges L and graduated slides D, substantially as and for the purpose set forth.

No. 52,905.—ANDREW J. STOVER, Sandyville, Iowa.—*Cultivator.*—February 27, 1866.—This invention consists in such an arrangement of parts as to allow the operator to have full control over the ploughs or shares, and the latter rendered capable of being operated while the driver is either walking or riding.

Claim.—The oblique bars D D, connected to the draught pole C, and having standards I and shares J attached as shown, in combination with the plough beams G G connected to the bars D D, and arranged to admit of being turned to give a lateral movement to the shares L, substantially as and for the purpose set forth.

No. 52,906.—ALFRED TAYLOR, Philadelphia, Penn.—*Manufacture of Water-proof Fabric.*—February 27, 1866.—This invention consists in saturating linen, cotton, paper, &c., with a composition of silicate of soda or potash and oxide of zinc. The fabric after being treated with this composition is dried and polished in any suitable manner.

Claim.—Treating paper, muslin, linen, and other fibrous and textile fabrics substantially in the manner hereinbefore described with a composition of liquid silicate of soda intimately mixed with white oxide of zinc, or other similar ingredient or ingredients, capable of forming, when applied as described, and subsequently dried, an insoluble compound therewith, and with or without the addition of other coloring matter, for the purpose of rendering textile fabrics in a high degree water-proof and susceptible of a fine polish, and also of increasing their stiffness and durability.

No. 52,907.—C. C. TAYLOR, Springfield, Mass.—*Paper Shirt Bosom.*—February 27, 1866.—The paper bosom is provided with a strip secured centrally and vertically to the front so as to represent a plait. The points or tabs are provided with eyelets which are used in connection with an elastic cord provided with a hook or similar device for securing it in place.

Claim.—As a new article of manufacture a paper bosom, having a central plait stitched fast, and having its upper end protrude and provided with a button-hole as shown, and having eyelets in the shoulder points for securing it by means of the elastic cord and hook, as shown and described.

No. 52,908.—SIMEON N. TAYLOR, Horicon, Wis.—*Knuckle Joint.*—February 27, 1866.—This invention relates to a coupling for connecting together the tumbling rods of threshing machines and the shaftings of other machinery which require to be placed in an oblique position relatively with each other. The invention is designed as an improvement on a knuckle joint for which letters patent were granted the same inventor February 16, 1864, and consists in constructing the parts so that the tumbling rods may be turned in either direction, the original device being capable of turning in one direction only.

Claim.—The construction or forming of the head C of the shaft D with ribs or projections *c*, both sides of which have a radial position with head in combination with the longitudinal ribs or shoulders *a* of the socket A, which are formed by making a series of curved recesses or grooves in the socket, the shoulders *a* extending the whole length of the interior of the socket A to admit of the tumbling rods B D being turned in either direction—that is to say, to the right or left as may be desired.

No. 52,909.—T. C. TAYLOR, Philadelphia, Penn.—*Constructing Air-tight Vessels.*—February 27, 1866; antedated February 16, 1866.—This invention consists in constructing the rims of sheet metal ware, such as plates, pans, &c., so that they may be soldered together when it is desired to make an air-tight vessel, and admit of their being opened with a knife without injury to the said plate.

Claim.—An air-tight vessel composed of two table plates or pans, or other similar culinary utensils of sheet metal, so united as to be proof against air and moisture, and capable of being readily separated into their separate forms without injury or waste of any part of their original material, substantially as described.

No. 52,910.—T. CHALKLY TAYLOR, Philadelphia, Penn.—*Method of Putting Up Caustic Alkali.*—February 27, 1866.—This invention consists in casting the alkali into blocks similar in shape to the boxes intended to hold them. The blocks are then placed in the boxes, and the space between the blocks and the interior of the boxes is filled up with resin, tallow, or other similar substances.

Claim.—Putting up caustic potassa or soda in suitable casks or vessels, each of which is capable of containing more than one block of the alkali, and protecting the same by oil or its equivalent in such a way that a portion of the alkali may be removed for use or sale without exposing the remainder to injury in consequence of such removal.

No. 52,911.—CHARLES H. THATFORD, Jamaica, N. Y.—*Baling Press.*—February 27, 1866.—This invention consists in an arrangement of levers, platens, and windlasses, whereby, when the top platen is fully raised, it may be moved laterally off from the top of the press box and back again to facilitate the filling of the box. The construction of the working parts of the press is such that a progressive power is given to the press, which

power gradually increases as the platens approach each other and until the movement is completed.

Claim.—The two platens J O connected with the levers M M, as shown in combination with the windlass arrangement, composed of the rollers D D, connected by gearing E E F, and the chains or ropes R R attached to the levers M and the rollers D, substantially as and for the purpose herein set forth.

Also, in connection with the press, as described, the arrangement of the top platen O in such a manner that when said platen is fully raised it may be moved laterally off from the top of the press box and back over the same, in order to facilitate the filling of the press box, substantially as set forth.

No. 52,912.—ALVAH TUCKER, Gilford, N. H.—*Bolt-heading Machine.*—February 27, 1866.—This invention consists of a pair of vertical jaws, one being hinged to the other near the bottom which carries the dies. They are forced together by a cam secured in a frame around the top of said jaws and opened by a spring. A sliding gauge for the end of the bolt blank to rest upon, having notches in it which correspond with notches on the stationary jaw, is held firmly in its place by a key driven through a stop in a projecting tongue and bearings against the side of said jaw.

Claim.—First, the combination of the standard A, pivoted jaw B, band H, cam C, and spring S.

Second, the combination of the sliding foot, or hub, and tapering pin with the standard A and pivoted jaw B, all constructed substantially as described, when arranged and operating substantially as set forth.

No. 52,913.—LORENZO B. TUPPER, New York, N. Y.—*Grate Bar.*—February 27, 1866.—In this invention the bearing bar is notched in its upper edge to receive the rib of the grate bars or sections upon which are hooks to hold them in place.

Claim.—The bearing bars *a* formed with notches in their upper edges to receive the rib of the grate bars or sections, and prevent sidewise motion, substantially as specified.

Also, in combination therewith, the hook ends 4 to the grate bars, for the purposes and as specified.

No. 52,914.—G. Z. VAN RIPER and W. A. VAN RIPER, Lagrange, Mich.—*Basket.*—February 27, 1866.—This invention consists in the employment of metallic hoops or bands passing from the top hoop on one side down on the bottom of the basket and up on the other side, both ends of each hoop being secured to the top hoop on opposite sides of the basket, which strengthen it.

Claim.—The employment of metal strips B B, one or more passing under the basket, and having their ends secured to the top hoop of the basket, for the purpose of strengthening the same, substantially as specified.

No. 52,915.—LOUIS VON FROBEN, Washington, D. C.—*Machine for Levelling Streets.*—February 27, 1866.—The object of this invention is to level pavements by means of a machine propelled by steam or animal power, and it consists in the arrangement of a hammer, running in grooves within the machine, raised by means of racks upon the hammer frame, coming in contact with toothed wheels attached to a shaft, the latter being operated by similar gearing upon the wheel axle. As the gears operating with the racks have teeth only about one-third of its circumference, it is suddenly released from contact with the hammer rack, and the latter falls and levels the pavements.

Claim.—The combination and arrangement of the cog wheels A D F and G G, bolt *b*, and trip-hammer H, and the shafts C and E, with the pawl and ratchet S, substantially as and for the purposes herein specified.

No. 52,916.—EUGENE WARD, New York, N. Y.—*Attaching Runners to Wheels of Wagons.*—February 27, 1866.—A hinged brace provided with flanges through which is a hole, and into which hole fits a wedge, is applied to the wheel of a wagon, so that it will be secured to the wheel at three separate points, and which may be easily attached to the wheel by running the latter upon it, without the necessity of lifting the wheel.

Claim.—The hinged brace B, fitted as specified, in combination with the runner A, constructed substantially as specified, so as to be connected to the wheel at two points, as set forth.

No. 52,917.—RICHARD WASHBURN, Monsey, N. Y.—*Manufacture of Glass.*—February 27, 1866.—This invention consists in using a dark-colored mineral which is found near Monsey, Rockland county, New York, as a material for glass.

Claim.—First, the use of what is termed "glass ore" in the manufacture of glass.

Second, the use of "glass ore" mixed with soda ash, or other suitable flux, in the manufacture of glass.

Third, the glass produced from what I term "glass ore," as a new article of manufacture.

No 52,918.—Mary J. West, Watertown, N. Y.—*Marking Attachment for Sewing Machines.*—February 27, 1866.—To the top of the needle bar is secured a marking bar or rod by means of a clamp or set screw. The rod and marker foot both pass through the head or slide on a line with the top of the needle bar. The head is secured in any desired position by means of a set screw, and the foot is similarly secured in the slide so as to admit of both a vertical and horizontal adjustment.

Claim.—The attachment to and combination with a vibrating needle bar, of a marker constructed substantially as herein described, the same consisting of a rod clamped to the needle bar combined with a sliding head, whereby the spring foot holding the marking material is adjusted both horizontally and vertically, as set forth.

No. 52,919.—Amos Westcott, Syracuse, N. Y.—*Churn.*—February 27, 1866.—This invention consists in the application of bellows to a churn, the bellows being attached to a board or frame which slides into grooves immediately below the box; the bellows are provided with an induction valve through which the air is received, and a similar valve opening outwards in the eduction pipe, preventing the return of air from the pipe into the bellows. This valve opens into a chamber in the sliding board, which communicates with the pipe, through which the air may be conducted into any part of the box that may be desired.

Claim.—First, the combination of the bellows B with the rod M, eccentric L, driving wheel K, pinion O, attached to the shaft of the churn, substantially as and for the purpose set forth.

Second, the arrangement of the bellows B with the sliding board H, when the latter is attached, chambered, and connected with the body of the churn, substantially as set forth.

No. 52,920.—Owen P. Whitman, Lynn, Mass.—*Composition for Graining Leather.*—February 27, 1866.—This invention consists of a composition of extract of logwood, gum-arabic, oxalic acid, kerosene oil, and alcohol.

Claim.—The said composition made of the ingredients and for the purpose substantially as described.

No. 52,921.—Amos Whittemore, Cambridgeport, Mass.—*Vaccinator.*—February 27, 1866; antedated February 21, 1866.—This device consists of a hollow case in which is pivoted a bar having secured to it a point, and also provided with a notched projection in its free end on the opposite edge to the point. The said bar is held in position by a spring, and its free end is elevated by means of a lever, which latter has on its short arm a knife-edge projection, which is designed to catch into the notch of the bar when the long arm of the lever is thrown up by the spring, by means of which the skin will be penetrated and the vaccine matter introduced at one and the same time.

Claim.—First, the pivoted slotted lever *e*, the notched bar *c c'*, and spring *d*, in combination with the enclosing case A, substantially as described.

Second, applying a spring *d* to the instrument in such manner that it will operate upon the bar *c* and lever *e*, substantially as described.

Third, constructing the pivoted and slotted lever *e* with a tooth e^1 and a nose e^2 upon one end, in combination with the notched end *c'* of the bar *c*, substantially as described.

No. 52,922.—William Widmeyer, New York, N. Y.—*Spiral Stair.*—February 27, 1866.—This invention consists in casting the steps of iron spiral stairs, each being hollow, with a portion of the supporting column.

Claim.—The combination with the frame A of the lugs *d e*, spiral brace *f*, and the hollow central hub B, cast with a projecting flange *a* at one end, and a countersink *b* at the other, all as herein described, and for the purpose set forth.

No. 52,923.—Erastus S. Woodford, Winchester, Conn.—*Ox-bow Pin.*—February 27, 1866.—This invention consists of a self-acting and locking bow-pin; a bed-plate of metal is made with a groove in its longitudinal centre for the pin to move back and forth, with a hole through one end, through which the bow passes as it is pushed through the bow hole into the yoke, when it is easily slid out of its partitions in the hole of the ox-bow.

Claim.—The combination of the bed-plate B, the pin C, springs 1 and 2, and the cap D, as and so as to operate in the manner and for the purposes specified.

No. 52,924.—John C. Young, Newark, N. J.—*Crupper Loop for Saddletrees.*—February 27, 1866.—This invention consists in forming a crupper loop as a ring or open frame, in combination with lugs on the tree or seat piece of a saddle and tree, which are united directly to each other by a screw, the crupper loop being retained between them.

Claim.—Forming the crupper loop as a ring or open frame, in combination with lugs on the tree or seat piece, as set forth, the saddle and tree being united directly to each other by a screw, and retaining the crupper loop between them as specified.

No. 52,925.—Hiram Berdan, assignor to the Berdan Fire-arms Manufacturing Company, New York, N. Y.—*Breech-loading Fire-arms.*—February 27, 1866.—This invention consists in so arranging a jointed swinging breech piece that it is forced into place and

held there by means of the hammer; also in having the firing pin pass through the joint pin of the breech piece. Elongated holes are formed where the breech piece is connected with the barrel, in combination with a circular projection on the face of said breech piece, by which it has a self-adjusting movement, and relieves the hinge from any strain. It also consists in a combination of parts, by which the cartridge shell is ejected without elevating the muzzle.

Claim.—First, a jointed swinging breech piece, when the detached end of the brace is forced or held in position by the hammer or other suitable projection from the hammer shaft, substantially as herein set forth, for the purpose of communicating less strain to the hammer than when an unjointed swinging breech block is used.

Second, the combination of the brace D jointed to the swinging breech piece, the hammer and the safety notch *h* in the tumbler, substantially as described, whereby the hammer, while held back from the firing pin, is made to prevent the detached end of the brace from rising above a position in which it locks the breech piece.

Third, a firing pin inserted through the joint pin of the breech piece and attached brace, and securing the said joint pin in place, substantially as herein specified.

Fourth, the elongated hole or holes in the strap E, or other part of the hinge connection of the swinging breech piece C, in combination with the circular projection *b* provided on the face of the breech piece to enter the chamber of the barrel, substantially as herein specified, whereby the self-adjustment of the breech piece to the recoil bearing is provided for, and the liability to strain the hinge by any rear or upward tendency of the breech piece is counteracted.

Fifth, the combination of the spur *j*, hook *k*, spring *l*, and ways *m m*, when employed in a breech-loading fire-arm having a recoil shoulder *c*, in line with and at right angles to the bore, to completely eject a cartridge or shell without elevating the muzzle, substantially as herein set forth.

No. 52,926.—Edward Bucklin, Jr., Pawtucket, R. I., assignor to himself and Lysander Flagg, Jr., Smithfield, R. I.—*Machine for Cutting Files.*—February 27, 1866.—This invention consists in arranging the cutter stock upon a hinged and vertically vibrating plate, which is elevated and depressed so as to maintain the edge of the cutter at a uniform distance above the curved surface of the blank by a friction roller attached to said plate, which travels upon the surface of a pattern way upon the sliding carriage; also in devices for increasing the tension of the spring which produces the blow, so as to make cuts of different depths on different parts of the file—that is to say, so that sections of the file, in direction of its length, will present, alternately, teeth of greater or less elevation; also in auxiliary springs, which may at pleasure be used to increase the force of the blow; also in a cylindrical anvil with a series of beds to accommodate blanks of different lengths.

Claim.—First, the screw E operated by the ratchets H H and pawls I I, in combination with the adjustable pin *d* fitted in the eye D attached to an arm C connected with the slide or carriage, all arranged substantially as and for the purpose set forth.

Second, connecting the eccentric rods *l l* to the pawl arms *g* through the medium of adjustable bars *i*, for the purpose of varying the speed of the feed, all constructed and arranged substantially as described.

Third, the cylindrical file bed K provided with a series of longitudinal recesses to suit file blanks of different forms, as set forth.

Fourth, the clamp L, constructed and applied substantially as shown and described, for holding the file blanks in or on to the bed K.

Fifth, the plate P, on which the cutter stock N is fitted, arranged with springs S S and journals *v*, in combination with the pattern or shaper T at the side of the slide or carriage on which a roller *h'* at the lower end of a bar *g* attached to the plate P rests, all arranged as shown, for the purpose of adjusting the cutter to suit the shape of the file blank, substantially as set forth.

Sixth, the cutter stock N fitted to the plate P so as to be capable of adjustment thereon, to place the cutter in a proper relative position with the file blanks to suit the different cuts required, all constructed and arranged substantially as described.

Seventh, the duplex or double spring W arranged with a movable upper part *i'*, so that said upper part may be turned over the lower part, or moved off from it, according to the strength of the blow required to be given to the hammer.

Eighth, the giving of stronger blows to the hammer intermittently by means of the track Z having an irregular upper surface, the pivoted bar X, with roller Y, resting upon said track, the rod A' and lever B', all arranged to operate substantially in the manner as and for the purpose set forth.

Ninth, the cutter O fitted in the stock N, and retained by a spring *a'*, adjustable substantially in the manner as and for the purpose specified.

No. 52,927.—Orren H. Burdick, assignor to himself and David M. Osborne, Auburn, N. Y.—*Harvester.*—February 27, 1866.—This invention relates to a combined rake and reel, the arms of which are independently hinged to a horizontal disk or plate rotating about a vertical axis. The rake and reel arms are moved through different paths; the rake arms being operated by means of an adjustable track, under the control of the attendant, acting upon the

extended heel end of the pivoted arms; and the reel arms, by a pin or lug formed on the rake and reel standard or support, acting in a similar manner upon the heel of the reel arms, both rake and reel arms are thrown into a horizontal position when acting upon the grain, and are retracted to a vertical position when not in action, by means of coiled springs arranged upon their pivots or axes.

Claim.—First, the combination of the spur *a* with the cam of an independent reel-beater, substantially as and for the purpose described.

Second, in a combined rake and reel, working independent of each other, and on separate tracks, the combination of the track or way upon which the cam of the rake shank travels with the cam of the shank of an independent rake, substantially as and for the purpose described.

Third, an adjustable and controllable track or way for the cam of the rake shank, made and operated by the treadle, substantially as herein set forth, and for the purpose described.

Fourth, in a combined rake and reel, the employment of an entirely independent and separate track or way for the cam of the rake shank from that traversed by the cams of the reel beaters, substantially as and for the purpose described.

Fifth, the employment, in a harvesting machine having a combined reel and rake, both traversing at all times in different paths, and both revolving around a vertical centre, of the mechanism whereby the rakes and reel beaters are made to traverse different paths over the platform, substantially as and for the purpose described.

Sixth, the combination of the reel beater with its adjustable crank, substantially as and for the purpose described.

No. 52,928.—VALENTIN FOGARTY, Boston, Mass., assignor to CORN'S CALLAGHAN, Boston, and JAMES BIRMINGHAM, Roxbury, Mass.—*Lemon Squeezer.*—February 27, 1866.—This invention consists of a hollow shell or casing, within which the lemon is placed; a plunger is forced down upon the lemon by means of a screw so as to extract the juice, which is forced through a nozzle or orifice at the bottom of the casing.

Claim.—The within-described lemon squeezer, consisting of the casing A, with its plunger C, operated by the screw B, substantially as set forth.

No. 52,929.—EDWARD DUFFEE, assignor to himself and JOHN A. APPLETON, Jr., Haverhill, Mass.—*Gas Retort.*—February 27, 1866.—This invention consists in hinging a guard to a metallic plate which is attached to the edge of the furnace. A door is hinged to the mouth of the furnace, and is attached to the guard in such a manner that it may be opened when the guard is thrown back. The guard is provided with a door corresponding to the mouth of the ash-pit, and the lower part of said door is provided with a register, by means of which the supply of air to the furnace may be regulated.

Claim.—The combination of the guard C, made substantially as described, or the same and its connection plate D, with the front A of a gas retort furnace, the same being to operate therewith as specified.

Also, the application of the guard C to the furnace-mouth door, by means whereby the said door shall be moved or operated by the guard in manner as specified.

No. 52,930.—WILLIAM MOREHOUSE, assignor to himself and J. FRASER, Buffalo, N. Y.—*Wrench.*—February 27, 1866.—In this invention the handle, which is pivoted at one end between two flanges, to which one of the jaws is connected, has a series of teeth upon its rounded end, which gear with similar teeth upon a straight bar to which the other jaw is connected. When being used, the whole strain coming upon the teeth, the jaws are caused to gripe the nut with a force proportionable to that exerted by the hand upon the handle.

Claim.—First, operating the movable jaw of a wrench directly by the handle, substantially as described.

Second, the combination of the handle A with a segment formed on it, pivoted jaw B, and the sliding jaw B′, having teeth formed on it which engage with the pivoted end of the handle, substantially as described.

No. 52,931.—MILTON V. NOBLES, Rochester, N. Y., assignor to himself and JOHN C. NOBLES, Rushford, N. Y.—*Sinking Tubular Wells.*—February 27, 1866.—An inner tube is used which is turned by a valve rod so that as the water enters the tube the pump can be operated without withdrawing anything from the tube or inserting anything therein.

Claim.—Using the valve rod D to turn the inner tube, so that as soon as, or whenever, the water enters the tube the pump is complete and ready to be operated, without withdrawing anything from the tube or inserting anything therein, substantially as shown and described.

No. 52,932.—GEORGE REHFUSS, assignor to himself, C. S. PATTERSON, E. VINCENT, A. HART, M. MOORE, A. MITCHELL, and A. H. REED, Philadelphia, Penn.—*Feed-adjusting Device for Sewing Machines.*—February 27, 1866.—This invention consists in forming the cavity and slits so that the disk may be secured in the desired position without bearing so firmly against the plate as to be adjusted with difficulty.

Claim.—The concave disk C, with its slits *i i*, and arm *e*, constructed and combined with the feed device of a sewing machine, substantially as and for the purpose specified.

No. 52,933.—JAMES D. SMITH, Bridgeport, Conn., assignor to OLIVER F. WINCHESTER, New Haven, Conn.—*Magazine Fire-arm.*—February 27, 1866.—This invention is designed as an improvement on the Smith and Wesson patent of February 14, 1854, and the Henry patent of October 16, 1860; and it consists in providing guiding grooves or ledges in the breech plate to receive the flanges of the cartridges as they are raised from the magazine tube by the carrier, and thereby more surely guide them into the jaw of the breech-pin, by which they are carried to their seats in the chamber of the barrel.

Claim.—The combination of the guides, d^2 d^2, with the hooks, a' a', upon the breech-pin, L, substantially in the manner and for the purpose set forth.

No. 52,934.—JAMES D. SMITH, Bridgeport, Conn., assignor to OLIVER F. WINCHESTER, New Haven, Conn.—*Magazine Fire-arm.*—February 27, 1866.—This invention is designed as an improvement in a fire-arm patented by Henry, October 16, 1860; and it consists in so forming the carrier block which transfers the cartridges from the tubular magazine beneath the barrel to the chamber of the barrel, that when the said carrier is in its highest position, the rear end of the stationary magazine tube will be so exposed that it may be conveniently supplied with cartridges by simply inserting them beneath the said carrier.

Claim.—The combination of the fixed magazine A′, mortise D, and carrier block E, constructed and arranged so as to charge the magazine through the frame and beneath the carrier block, substantially as and for the purpose specified.

No. 52,935.—WILLIAM E. STANIFORD, assignor to himself and J. EDWIN SHERMAN, Bucksport, Maine.—*Clothes Sprinkler.*—February 27, 1866.—This invention consists of a flat plate, provided with a handle and a series of tufts of woollen yarn, applied to the plate, as bristles of a brush are usually applied.

Claim.—A clothes sprinkler, made with woollen yarns applied to the part, A, substantially as described.

No. 52,936.—JOHN TAGGART, Roxbury, Mass., assignor to himself, J. H. LESTER, and CHARLES D. ELLIS, Boston, Mass.—*Braiding Machine for Making Three-strand Braids.*—February 27, 1866.—The object of the four springs, in connection with the switch, is that one of the curved springs, being pressed upon by a racer foot, shall cause the frog or switch to turn on its pivot, while one of the straight springs shall aid in holding the frog so turned or set, while it will at the same time yield to the racer, and also thus compensate for any variance in the sizes of the racer feet. The object is to effect an automatic taking up and winding of the braid, as it is made.

Claim.—The combination and arrangement of the four springs k k k k, with the frog F, arranged with respect to the racer circuit, substantially as specified.

Also, the arrangement and combination of the frog F, and its four springs k k k k, with the racers and their operative plates, constructed in manner and so as to operate as specified.

Also, the arrangement and combination of the upright shaft z, and its three arms y a' a', the slider w, and its pawl v, with the draught rollers, the three racers, and their operative plates and frogs, as specified.

No. 52,937.—NEWIL J. WILLIS, assignor to himself and AMMI BROWN, Boston, Mass.—*Spring Bed Bottom.*—February 27, 1866.—This invention consists of a roller placed at each end of the bedstead, to which the slats of the bottom are attached by their ends by strips of leather; in each slat there is a metal spring on which the strips of leather have a bearing and yield to the pressure of the slats.

Claim.—The combination and arrangement of the round bars B C, the springs b, and their straps a, such being affixed to the frame A, and the slats D, substantially as described.

No. 52,938.—JOHN FREDERICK CHRISTIAN CARLE, Hamburg, Germany.—*Breech-loading Needle Guns.*—February 27, 1866.—This arm belongs to the class of needle guns. The barrel is moved forward a short distance by the action of a lever, turning horizontally between, and provided with a cam and link, so as at the same time to cock the spring plunger. The barrel, on being moved sufficiently forward, is allowed to tilt upward at the breech, so as to allow it to be loaded.

Claim.—The slide q, in combination with connecting rod r, spiral spring m, upright s, and lever t, substantially in the manner and for the purpose herein set forth.

No. 52,939.—PHILIP COOMBES, Liverpool, England.—*Apparatus for Separating Whey from Curd.*—February 27, 1866.—This invention consists in the combination of a pump and filter or sieve, for the purpose of separating the whey from the curd in cheese factories.

Claim.—In the manufacture of cheese, separating or removing whey from curd by mechanical means or apparatus, consisting of a pump and filter, or sieve, substantially as herein set forth and illustrated by the accompanying sheet of drawings.

No. 52,940.—WILLIAM DAWES, Leeds, England.—*Organ, Harmonium, &c.*—February 27, 1866.—The nature and object of this invention are explained by the claim.

Claim.—Giving an improved or increased accent or expression to organs, harmoniums, and other harmonious keyed instruments, by imparting to them the mechanical capability of giving or sounding automatically the air (soprano) or melody only (additionally) upon one or more parts, portions or sections, while the other parts of the same instrument are giving or sounding the full chords or harmony as heretofore, both parts or sections receiving at the same time the same first motion, action or influence from the keys and player.

No. 52,941.—JAMES EASTON, Jr., Grove Southwark, England, and FRANCOIS THIRY, Huy, Belgium.—*Apparatus for the Manufacture of Paper Pulp.*—February 27, 1866.—This invention consists of an apparatus for reducing straw to "half stuff" for the manufacture of paper. The straw after being cut up into short lengths is immersed in an alkaline solution, and subjected to steam pressure in boilers of peculiar construction, after which it is washed and discharged from the boilers by the aid of a copious stream of water supplied thereto.

Claim.—First, the passage E and movable fire boxes or cars B, in combination with two or more boilers A A^1 A^2, constructed and operating substantially as and for the purpose set forth.

Second, the radial arms *d*, and the chains *d'*, in combination with the boilers A A^1 A^2, and with suitable gear, intended to give the shaft from which the arms *d* extend a revolving motion, substantially as and for the purpose described.

No. 52,942.—ALFRED PARAF, Mulhouse, France.—*Dyeing Yarn, &c.*—February 27, 1866.—This invention consists in using chloric acid, combined with bases which form salts more soluble than the chlorate of potash generally used in preparing fabrics for dyeing—such, for instance, as soda, baryta, strontia, &c.

Claim.—As oxidizing agents in dyeing and printing, the use of the oxygen compounds of chlorine more soluble than those combined with potash, such as chlorate of soda, chlorate of ammonia, chlorate of barytes, chlorate of strontian, chlorate of lead, chlorate of lime, chlorate of magnesia, chlorate of alumina, chlorate of zinc, chlorate of nickel, chlorate of copper, chlorate of chrome, chlorate of manganese, and chlorate of potash, when decomposed by hydro-fluo silicic acid, either for preparing textile fibres to be printed with steam colors or with aniline black, catechu brown, and similar colors, or by mixing them with colors and dyeing both to oxidize; and to the aniline black color, in order to hasten the oxidation. I find advantage in adding 2½ to 3 per cent. of a salt of protoxide of iron or copper, and print such colors upon cloth prepared in one or more of the above-mentioned soluble chlorates.

Also, the use of the chlorites and hypochlorites in the place of the chlorates in dyeing and printing.

Also, the preparation of animal fibres in copper salts, mixed with chloric and chromic acid salts, to enable them to receive aniline blacks or other similar colors for dyeing and printing.

No. 52,943.—WILLIAM THOMPSON, Dublin, Ireland.—*Compound for Fining, Purifying, and Mellowing Spirituous Liquors.*—February 27, 1866.—This invention consists in mixing in a large vat 20 cwt. of French prunes, 15 cwt. of Muscatel raisins, 100 gallons of rectified spirits of wine, 50 gallons of extract of prunes, 48 pounds of acetic ether, 450 gallons of Sicilian wine, 20 gallons of extract of vanilla, 108 gallons of Spanish wine, 20 cwt. of refined sugar or honey, and 300 gallons of distilled water. The whole of these ingredients are steeped and incorporated, and allowed to ferment for eight weeks, after which the liquor is racked off into smaller vessels, and allowed to stand until it becomes bright, when it is ready for use.

Claim —An improved spirituous or vinous compound for fining, purifying and mellowing spirituous liquors, containing an admixture of prunes, saccharine matter, water, rectified spirits of wine, and extract of prunes, prepared in manner and for the purposes substantially as hereinbefore set forth.

No. 52,944.—EDWARD C. HARRIS, New York, N. Y.—*Wood-bending Machine.*—February 27, 1866.—The object of this invention is to bend the front of pianos, when built up of thin sheets of wood and veneered, and it consists of a concave bed, having the form of the front and corners of piano frames, in which the thin sheets that form the frame are glued together and veneered on the two sides, and held between heated metal plates or bending straps. They are then forced into this concave bed, and held in such position until the wood is firmly set.

Claim.—First, bending the fronts of pianos, whether formed of thin sheets of wood glued together and veneered as described, or in one piece and veneered, by forcing such front or block into the concave bed, by applying power to blocks A, and holding the stuff thus bent in position by clamps B and B', operating on the bending blocks in combination with the heated bending plates, substantially as set forth.

Second, in combination with the above, the movable supplementary sections C, arranged and employed in the manner and for the purposes specified.

No. 52,945.—CHARLES F. JAURIET, Aurora, Ill., assignor to himself and A. J. AMBLER, Chicago, Ill.—*Fire-boxes of Steam Generators.*—February 27, 1866.—This invention consists in the construction of a water bridge or deflector, with the upper edge of its lower end placed at

the junction of the cylindrical portion of the boiler with the water leg thereof, and having free communication with the water space of both the above-mentioned portions of the boiler at its front end and both of its sides.

Claim.—First, the water bridge which is arranged as specified, and is formed of a flat sheet of metal bent into the form of a semi-tube, with flat surfaces at top and bottom, and applied to a fire-box which has those portions of its side and back walls included within the area of the semi-tube entirely cut away so that there is a perfectly free passage for the water in at the back and out at the sides of the bridge, substantially in the manner and for the purpose described.

Second, the combination of the stay bolts with the semi-tube water bridge, substantially as and for the purpose described.

Third, the combination of the through stay bolts, semi-tube water bridge, and the outer jacket of the fire-box, substantially as and for the purpose described.

No. 52,946.—SAMUEL N. CHAMBERLAIN, Abington, Mass.—*Apparatus for Generating Gas for Illuminating.*—February 27, 1866.—This invention consists of a reservoir provided with cells or receptacles placed one above the other, which contain gasoline or other lighter grades of hydro-carbon oils. An opening is made in the top of the reservoir for the entrance of air which mixes with the vapor arising from the gasoline, and forms an illuminating gas.

Claim.—First, the reservoir pans or shelves contained therein, when constructed with a discharge pipe and otherwise, as above described, and used as above described for carburetting atmospheric air forced through it by this change produced in such air by this process and by no other means.

Second, the column or vessel A, with a series of pans *a*, openings *b*, and discharge pipe *d*, as herein described.

No. 52,947.—WALTER S. WILKINSON, Baltimore, Md.—*Pump for Oil Wells.*—February 27, 1866.—In this pump the piston rod is tubular. Through the side of the pump are inserted three wedges of hard wood or metal, which are held in position by means of springs pressing upon each of them from the outside, and a cone resting between them on the inside. The cone is attached by means of a plate and flange to a hollow screw, having a thread cut on its outside, and working in a corresponding thread on the top of the pump. A packing cylinder of lead or other soft metal is driven down on the circular head of the pump by means of a coupling of the piston pipe.

Claim.—First, the cone F, attached to a hollow screw H, in combination with two or more wedges D, operated in the manner and for the purpose substantially as herein set forth.

Second, the combination and arrangement of the packing cylinder K, and the screw H, and the coupling L of the piston pipe B, as herein described and for the purpose set forth.

No. 52,948.—RICHARD L. ALLEN, New York, N. Y.—*Plough.*—March 6, 1866.—This invention consists in the method of connecting and fastening the coulter to the share and to the beam, whereby increased stability and efficiency is given to the coulter, and greater strength to the plough.

Claim.—First, attaching and securing the coulter to the ploughshare or land side by a dovetail joint or connection, substantially as described.

Second, so arranging or placing the coulter A and brace E with respect to each other, as described, that they give increased stability and strength to the several parts of the plough.

No. 52,949.—DAVID BABSON, 2d, Rockport, Mass.—*Wheel and Axle of Railway Cars.*—March 6, 1866.—This invention consists in arranging friction rollers within both the wheels and axles of railroad cars, the wheels revolving independently of each other. The object is to reduce friction.

Claim.—Hanging the wheels of a railway car upon their axles, so that they can turn independent of each other, but with no lateral play, in combination with the use of a series of friction rollers within said wheels. and their axle boxes bearing upon the axles, substantially as herein described and for the purposes specified.

No. 52,950.—GEORGE BEARD, Salineville, Ohio —*Tailors' Measures.*—March 6, 1866.—This invention requires a reference to the description and drawings to be properly understood.

Claim.—Patterns for laying out measurements on cloth and other materials, constructed and operating substantially as above shown.

No. 52,951.—GEORGE BEARD, Philadelphia, Penn.—*Tailors' Measures.*—March 6, 1866.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—A device for marking or cutting out pantaloons and similar garments, comprising one or more adjustable slides in combination with a fixed or main portion A, all being provided with graduated cross strips and arranged substantially as described.

No. 52,952.—JOHN BEECHLEY, Dayton, Ohio.—*Evaporator.*—March 6, 1866.—This invention consists of a pan having partitions, so arranged as to form a continuous passage for the sirup from one end of the pan to the other. A partition extends across the pan near the chimney, forming a chamber into which cool water is made to flow from a tank. The water escapes from the pan through a pipe.

Claim.—Providing an evaporating pan with a cold-water chamber C′, arranged in such close proximity to the finishing or drawing off part of the pan, that the sirup may be evaporated to the proper consistency without liability of scorching it, substantially as described.

No. 52,953.—MARTIN BISHOP, Lafayette, Ind.—*Paint and Drug Mill.*—March 6, 1866.—This machine consists of five mills, one central and the other four arranged around the central mill. The invention consists in a frustum attached to a spindle below the grinding cone, and removable from, and adjustable upon, said spindle in such a manner as to render possible the closing of the circular aperture of exit between the grinder and its casing, when desired.

Claim.—The arrangement on the spindle F of the removable and adjustable frustum C, attached below the grinding cone *c*, and adapted to be replaced or to close the aperture when required, as herein described.

No. 52,954.—FREDERICK BORCHARDT, Washington, D. C.—*Mode of Lacing Boots.*—March 6, 1866.—This invention consists in the attachment of a clasp to the top of the tongue, for the purpose of holding the lacer in loops at the top of the shoe to prevent the ends from hanging down loosely, and dangling about the shoe. On each side of the top of the shoe are fasteners for holding the lacers tightly, without the necessity of tying them in a knot, as usually done.

Claim.—First, the combination of the tongue clasp E, figure 5, with the shoe tongue and shoe lacer, as herein described and for the purposes set forth.

Second, in combination therewith, the fastener D, figure 3, as herein described, and for the purposes set forth.

No. 52,955.—SAMUEL BOYER, Charlestown, Mass.—*Window.*—March 6, 1866.—This invention has reference to the hanging of the sashes, they being connected in such manner by cords passing over pulleys, and joined with springs that one sash will counterbalance the other.

Claim.—The balancing of one sash by the other, by means substantially as described, viz., the cords, pulleys, and springs arranged and applied to the sashes and window frame, as explained.

No. 52,956.—LEANDER W. BOYNTON, Hartford, Conn.—*Machine for Making Cube Sugar.*—March 6, 1866.—This invention consists in washing the moulds by passing them through a pan containing water. The moulds, after being washed, and previous to receiving a new charge of sugar, are dried by means of a blast of air, produced by a fan.

Claim.—The employment of a blast or current of air, applied and directed to the moulds of a machine for moulding sugar, substantially as herein set forth, for the purpose specified.

No. 52,957.—ROBERT BRIDGE, Paterson, N. J.—*Safety-plug to Prevent Barrels from Bursting.*—March 6, 1866.—This invention consists in a metallic plug, to be inserted in the head, or other part of a barrel or cask while the contents are in a state of fermentation, having fitted in said plug a valve also of metal, and supported against its seat, by an adjustable spring of India-rubber, or other elastic material, which will yield when the pressure in the vessel from any cause exceeds a certain limit, thus securing the vessel or cask from bursting.

Claim.—The safety-plug, constructed with the valve, spring, and regulating screw, together with the passages *b* and *c*, when combined together, and used in the manner and for the purposes specified.

No. 52,958.—A. P. BRIGGS, Taunton, Mass.—*Clamp for Furnace-men's Use.*—March 6, 1866.—This invention consists of a clamp made in two L-shaped parts, each having upon its end a lug, one lug having a mortise through which the other slides; one of the parts is notched upon the side which bears against the other, which has a corresponding catch to hold them from spreading outward: a spring holds the catch and notches together. The turned up ends of the clamp so formed are not quite at right angles, that it may be driven tightly on to the flask after having been adjusted.

Claim.—An adjustable clamp, made in two parts, regulated by a ratchet and spur, made and operating substantially as herein set forth, and an adjustable clamp, as above described.

No. 52,959.—JOHN BROUGHTON, New York, N. Y.—*Oiler.*—March 6, 1866.—This invention consists of an internal reservoir, in one piece of elastic material, having an outer protecting shell of rigid material surrounding it, with an opening in the bottom for the admission of a thumb-piece, made movable, for compressing the bottom of the internal elastic reservoir, in discharging oil.

Claim.—First, in oilers provided with elastic or spring bottoms, forming the sides of the reservoir and said spring bottom in one piece, substantially as set forth.

Second, combining with the tube and cover of an oiler, a reservoir, the sides and elastic or yielding bottom of which are formed of one piece without joint or seam, substantially as set forth.

Third, combining with the reservoir of an oiler having an elastic or yielding bottom, an outside protecting shell or case provided with a suitable opening in the bottom, through which the elastic or yielding bottom of the reservoir can be compressed or operated, substantially as set forth.

Fourth, the combination of the reservoir provided with an elastic or yielding bottom, the outside protecting shell, and the centrally compressing thumb-piece, substantially as set forth.

Fifth, combining with the elastic or yielding bottom of an oiler, a stop applied in such manner that such bottom cannot be compressed or moved beyond the limit of its elasticity, when said stop operates externally in relation to such bottom, substantially as set forth.

No. 52,960.—JOHN W. BROOKS, Milton, STEPHEN F. GATES, Boston, and CHARLES BURLEIGH, Fitchburg, Mass.—*Rock Drill.*—March 6, 1866.—This invention consists of a drill mechanism, operated by compressed air driving a piston in a cylinder, the piston and piston rod being made hollow for the reception of the drill spindle, which slides snugly therein. The rotation of the drill is effected by a ratchet and pawl within the hollow piston rod, which latter being made to rotate itself, turns the drill spindle with it. This same rotation of the piston rod operates a nut, within which works a screw on the end of the drill spindle. The drill is thus kept up to its work. Inasmuch as harder rocks are met with the further the drill advances, an increased rotation of the drill is provided for, proportionate to its progress.

Claim.—The drill spindle H, with its central feed screw 18, in combination with a hollow piston D, and piston rod G, operating substantially as set forth.

Also, the ratchets *g* and *q*, operated by suitable mechanism in the same or opposite directions, in combination with the drill spindle H, for the purpose of rotating the drill and feeding it forward, substantially as described.

Also, the nut L, with its ratchet *q*, operated by suitable mechanism, in combination with the drill spindle H, for the purpose of feeding it forward, substantially as set forth.

Also, increasing the amount of rotation of the ratchet *q* as the piston advances, by means of the slot 24, and pin *s*, on the ratchet band *r*, or equivalent device, so as to produce the variable feed of the drill required by rocks of different consistency, substantially as set forth.

Also, introducing an elastic material a^2 between the nut L, or part attached to the drill spindle H, and the hub J, or part connected with the hollow piston rod G, substantially as and for the purpose set forth.

Also, the union coupling *o* for the purpose of connecting the feed nut L with the hub J of the hollow piston rod, substantially as described.

Also, the rock shaft M, with its adjustable tappet arms *w* and *a'*, moved by the dogs b^1 b^2, or equivalent device, for the purpose of operating the valve *e*, and regulating the movements of the piston and drill, substantially as set forth.

Also, the application to machinery for drilling rocks of an automatic stop, so arranged that when the piston is driven beyond the desired point in the cylinder, the compressed air or other motive power will be shut off, and the blow checked.

Also, the clamp B, having one or more latches *g'*, in combination with the bevelled disk O, operating substantially as described.

Also, the drill spindle H, with its feed screw cut thereon, substantially as described.

No. 52,961.—CHARLES BURLEIGH, Fitchburg, Mass.—*Rock Drill.*—March 6, 1866.—This invention consists in combining two or more cylinders with the drill or drill holder, which is placed outside the cylinders, and connected with their piston rods, which thus act simultaneously to drive the drill.

Claim.—The combination of two or more cylinders with the drill or drill-holder, operating substantially as described, for the purpose set forth.

No. 52,962.—C. C. BURNS, Greensburg, Ind.—*Car Coupling.*—March 6, 1866.—This invention consists of an automatic car coupling provided with a swinging pin, combined with a projection from the lower part of the draw head, to divide and share the strain; of stops to prevent the inversion of the pin; of slots for removal of the cross-bar of the coupling link; and of vertical abutments for supporting this cross-bar.

Claim.—First, the combination of the gravitating pin L, and projection N, with its accessories, for the purpose of dividing the strain which is brought to bear on the draw head A, by the link J, all arranged and operating substantially as set forth.

Second, the stops U and V, or their equivalents, for the purpose explained.

Third, the provision in a draw head of the vertical slots *e f* and *g' h'*, for the transposition of the link J, and gravitating pin L, in the manner described.

Fourth, the vertical abutments S and T, for the purpose of preventing the shaft I of the link J from being sprung out of line; also serving as a bearing for the same, in the manner described and set forth.

No. 52,963.—Ze Butt, Ocala, Fla.—*Cart.*—March 6, 1866.—This invention consists of a tail-board attached to the rear end of a cart by means of pivots, in such a manner as to be removable at pleasure, and automatic in so far as to revolve on its pivots, thus opening the cart when the latter is dumped, so as to allow the load to pass out, and closing it again when it assumes a horizontal position. The body of the cart is made deep or high immediately behind the wheels, for the purpose of giving a convenient form to the body.

Claim.—The manner of constructing, as herein described, and of attaching the tail-board or apron to carts, so as to be self-acting and adjustable.

Also, the form or configuration of the cart body, as described, with the extension B in front, and apron behind, for the convenience of loading.

Also, in connection with the cart body, as described, the adjustable brace or braces E E, when used for the purposes herein set forth.

Also, the apparatus herein described and shown, for sustaining the cart tongue.

No. 52,964.—Harvey L. Byrd, Augusta, Ga.—*Artificial Leg.*—March 6, 1866.—This invention consists in making the socket of the artificial limb and the cylinder which sustains the same of wire-cloth.

Claim.—The application to artificial limbs of sockets and cylinders made of wire-cloth of iron, steel, copper, zinc, or other metal, alloy, or other material or composition.

No. 52,965.—F. A. Calvert, Lowell, Mass.—*Steam Engine.*—March 6, 1866.—This invention consists in the combination and arrangement of the piston and the valves with their operating mechanism and a float in such manner as to admit to the cylinder a quantity of water or other non-elastic fluid, to act as an abutment for the steam to press against instead of the usual auxiliary piston moved by the power of the working piston. These devices are so arranged that steam may be admitted to the cylinder at any point of the stroke of the piston, and the float will be in close proximity to the piston, thus avoiding the necessity of filling all the space of the cylinder with steam before a working pressure is obtained.

Claim.—First, in the said engine the application of water or other non-elastic fluid to act as an abutment to the steam or motive agent of the engine, in manner and under circumstances substantially as described.

Second, the improved engine constructed substantially as described, viz., with the foot valve and its operative mechanism, and the float and cistern combined and arranged with the cylinder, the main piston and the steam induction and eduction ports and their valves, and the operating mechanism thereof in manner and so as to operate substantially as hereinbefore described.

No. 52,966.—John P. Chaplin, Valparaiso, Ind.—*Stove-pipe Drum.*—March 6, 1866.—In this invention, inside a stove-pipe drum of conical shape, with its smallest end down, is placed above the entering pipe a conical deflector, which is suspended by springs and moved by a rod with a handle on the outside of the drum.

Claim.—A heat radiator containing the springs I, and deflector N, when operated by means of the rod H, as set forth.

No. 52,967.—Orson A. Cheney, Orleans Township, Michigan.—*Grubbing Machine.*—March 6, 1866.—This invention consists of a pair of hooks attached to levers and arranged to seize and hold the grub or root while it is being drawn from the earth. The machine is also arranged to be changed from a grubber to a stump puller, or *vice versa*, when desired.

Claim.—First, the lever B, provided with the hook E, in combination with the hook D and lever A, all arranged and operating as and for the purpose set forth.

Second, making the lever B, hook D, and cross and bar *m*, removable, for the purpose of changing the implement from a stump puller to a grubber, and *vice versa*, as set forth.

No. 52,968.—A. G. Coes, Worcester, Mass.—*Wrench.*—March 6, 1866.—In this wrench the step which supports the end of the screw and against which the rosette bears abuts against the end of the ferrule and the latter is held in position by an inwardly projecting flange which fits in a notch in the shank.

Claim.—Making the ferrule in two parts, as shown at G and H, in combination with holding one of them up against the back pressure of the rosette I and screw E, by means of the projection *b* and notch *a*, substantially as set forth.

No. 52,969.—J. K. Collins, Huntsville, Ala.—*Knuckle Joint.*—March 6, 1866.—This invention consists in a construction of the joint whereby its centre pin is entirely relieved from strain and the joint rendered firm and strong.

Claim.—Connecting the two parts of a knuckle joint together by means of one or more rings *h h*, applied thereto, substantially in the manner and for the purpose specified.

No. 52,970.—Henry O. Cook, Portland, Maine.—*Hydraulic Steering Apparatus.*—March 6, 1866.—The object of this invention is the production of an apparatus for steering vessels by which the rudder shall be held firmly and securely at any position, and yet be capable of

being turned by hand with ease. To this end the invention consists of a cylinder, piston, communicating tubes, and an extension tiller, all arranged in a peculiar manner.

Claim.—First, the use in the above-described apparatus of hydraulic power for the purpose of turning a ship's rudder and holding it in any desired position.

Second, the combination of the extension tiller *g*, the joint *h*, and the rod *f*, for the purpose of enabling the rudder to yield to the waves, as described.

Third, the combination of the cylinder A, piston C, tubes *e* and *m*, rod *f*, and tiller *g*, all as and for the purpose specified.

No. 52,971.—GEORGE W. CORNELL and BERNARD B. QUINN, New York, N. Y.—*Pipe Mould.*—March 6, 1866.—This invention consists in making the moulds of cast iron, around the outer side of which is a case forming a water jacket. The two parts open in the centre in the usual manner, one sliding to and from the other on ways by means of a rack and pinion. The part which does not slide revolves a quarter of a revolution, presenting the mould upward for inserting the core, which is held in place by hooks when the flask is turned back. A ring of sand is formed in the mould at the point where the end of the pipe to be cast will have a bead, so that when it shrinks longitudinally in cooling, the sand ring will give way and prevent the pipe from cracking.

Claim.—First, the dry sand ring *k*, inserted into an iron or other metal mould intended for casting articles of iron or other metal, substantially as and for the purpose described.

Second, the water jacket E, in combination with the metal mould, constructed and operating substantially as and for the purpose set forth.

Third, the hinged hooks *i* in combination with the flask B and core D, constructed and operating substantially as and for the purpose described.

Fourth, the toothed racks *f*, and pinions *d*, in combination with the flask C and guideways *c*, constructed and operating substantially as and for the purpose set forth.

Fifth, the knuckle levers *m*, yokes *n*, and clamping bars *o*, in combination with the noses *r* and flasks B C, constructed and operating substantially as and for the purpose described.

No. 52,972.—EDWARD T. COVELL, Brooklyn, N. Y.—*Sheet Metal Can.*—March 6, 1866.—This invention consists in uniting the top, bottom, and sides of a metallic can by means of an outward and inward shaped flange so formed along the edge of any one piece as to be in a right line with and readily receive and embrace the simple straight edge of the next adjacent piece when said adjacent piece is placed at the necessary angle with the first.

Claim.—Uniting the top, bottom, and sides of a metallic pail, box, case, or can, with or without solder, and by means of folded joints or seams constructed, herein described, retaining and securing the adjacent edges of the several plates or pieces forming the can, substantialy in the manner herein set forth.

No. 52,973.—EDWARD CURTIS and ANDREW CROZIER, Ithaca, N. Y.—*Roofing Cement.*—March 6, 1866.—This invention is described by the claims.

Claim.—First, as a special article of manufacture, the ground rock of the commonly known Portage and Chemung groups, for the purpose of making a roofing material as described.

Second, the same when mixed with coal tar and applied directly to the roof boards, with no intervening substances, as a special design, as described.

Third, the said special mixture of the said ground rock and coal tar when applied over cloth, felt, tin, or other intervening substances, as described.

No. 52,974.—JOHN DANNER, Canton, Ohio.—*Coat or Hat Hook.*—March 6, 1866.—This invention consists in so making and hanging a coat or hat hook upon a rod or support that it may be moved lengthwise thereon to adjust for space as well as to swing up out of the way when not required for use.

Claim.—In combination with the cut-away stick or rod and its shoulder *e*, the circular openings in the brackets with their projections *f*, so that said brackets or hooks may be slid along on said rod and turned up out of the way when not required in use, substantially as described.

No. 52,975.—S. W. DAVIS, Plattsburg, N. Y.—*Horse Power.*—March 6, 1866.—This invention is designed as an improvement on what is known as Pitt's Anti-friction Surface Roll Horse Power. In it the decks, instead of being permanently framed, in the usual manner, in the cross braces of the machine, are rendered self-adjustable by wrists at their under sides which fit in boxes on the upper side of the braces. The decks are secured from displacement by means of an open guard frame which projects from the under sides of the decks below and in front of the wrists.

Claim.—The combination of the wrists *c*, boxes *d*, and the guard frame *e*, by which the decks C are rendered self-adjustable and secured against displacement.

No. 52,976.—SAMUEL C. DAWSON, Philadelphia, Penn.—*Composition for Treating Tobacco.*—March 6, 1866.—This invention consists of a composition to be used as a substitute for the licorice commonly employed in curing tobacco, and it is made by boiling roasted corn or other grain in water, sugar, and molasses, flavoring matter being added if desired.

Claim.—The use, for treating tobacco, of a composition consisting of Indian corn or other equivalent cereal, and sugar or molasses, or other equivalent saccharine matter, prepared substantially as described.

No. 52,977.—H. H. DODGE, Georgetown, D. C.—*Boot Blacking Apparatus.*—March 6, 1866.—This invention consists in hinging the cover to a portion of the side that falls when the cover is raised, and also in opening out from the box several shelves.

Claim.—The box A, provided with the doors F and G, hinged as shown, the cover C, attached to the hinged section D and shelf E, the whole being constructed and arranged substantially as shown and described.

No. 52,978.—ANDREW DOUDES, Canton, Ohio.—*Elastic Cement for Roofing.*—March 6, 1866.—This invention consists of a composition of four parts of coal tar, ten parts flour of lime, one part of hair, and two parts of sand.

Claim.—Employment of the within described ingredients for making an elastic cement, used together substantially in the manner herein specified.

No. 52,979.—SAMUEL EASTER, Charlestown, Mass., assignor to himself and W. W. WINSHIP, Malden, Mass.—*Travelling Trunk.*—March 6, 1866.—This invention consists in combining with the trunk a compartment or drawer sliding within the same, for the reception of a bonnet or hat in the top of the trunk; a stand, when it is so applied, is to be brought into an upright position by opening the trunk.

Claim.—Combining with the compartment *d*, or the drawer *c*, sliding within the same, the stand *f*, when said stand is so applied as to be brought into upright position by opening the trunk, substantially as and for the purpose set forth.

No. 52,980.—AUGUSTUS ECKERT, Trenton, Ohio.—*Preparing Fruit and Vegetables for Preserving* —March 6, 1866.—This invention consists in suspending the fruit in wire-gauze baskets above the surface of the water contained in a vessel, to which heat may be applied, in order that the fruit may be cooked by the steam generated in said vessel, a suitable receptacle being placed below the basket to catch the drippings from the fruit. The fruit thus prepared may be placed in the ordinary cans for preservation.

Claim.—Subjecting fruit, vegetables, and other similar substances to the action of steam in a closed vessel by suspending the fruit, &c., in such vessels in a vessel made of wire gauze or other suitable perforated or porous material, substantially as herein described and for the purpose specified.

Also, the combination of the two vessels A and B, arranged with regard to each other substantially as and for the purpose specified.

No. 52,981.—JOSEPH EDMUNDS, South Adams, Mass.—*Fence.*—March 6, 1866.—This invention consists in attaching the boards of a fence to the posts by passing the ends of the boards through staples driven into said posts, the boards being secured in place by wedges driven between the edges of the boards and the staples, so that any board or any portion of the fence may be removed and replaced without any injury to the boards or to the fence.

Claim.—An improved fence formed by attaching the boards to the fence by means of staples and wedges, substantially as described and for the purposes set forth.

No. 52,982.—LEOPOLD V. FICHET, New York, N. Y.—*Steam Superheater.*—March 6, 1866.—This invention consists in providing a solid mass of cast iron or other suitable metal, with suitable passages through it for the products of combustion to pass in a vertical direction, while another series of passages are provided for the passage of the steam in a horizontal direction for the purpose of being superheated.

Claim.—First, an apparatus for superheating steam, composed of a mass B, provided with a series of steam passages *b*, and a series of heating passages *c*, substantially as and for the purpose described.

Second, the chambers D, with partitions, in combination with the solid mass B, substantially as and for the purpose set forth.

No. 52,983.—WILLIAM G. FLOYD, Brooklyn, N. Y.—*Adjustable Clamp.*—March 6, 1866.—This invention consists in attaching to the end of a long nut a cam lever, the opposite end of the nut having an oblique hole in it which is slipped upon the long end of an L-shaped clamp; when the clamp is adjusted to the box or article to be clamped, the nut is dropped down the shank of the said clamp until it rests upon the top of the box, when the cam lever is turned so as to cause the edges of the oblique hole to bite the shaft and prevent it slipping up, thus clamping the articles tightly together.

Claim.—The nut K, of iron or other metal, with the round or square bevelled hole C, and cam E, in combination with the said follower D, for the purpose herein described and for other purposes, as shown in drawing or otherwise, as set forth in specifications.

No. 52,984.—E. G. FORD and J. F. PENQUIT, Delphos, Ohio.—*Potato Digger.*—March 6, 1866.—This invention consists in the arrangement of a slotted chute provided with shares

at its front and lower end; a belt and wings or scrapers for separating the potatoes from the soil: a reception box with a pivoted bottom and lever attachment, and in the manner of elevating the frame of the machine in front by means of a lever.

Claim.—First, the chute C, having its sides and bottom slotted as described, in combination with the horizontal shares *a* and *b*, and the belt B, provided with the wings *c*, all arranged to operate as herein described.

Second, the combination of box G, having its bottom pivoted as shown, with the pivoted screen *m*, rod *o*, and lever *l*, arranged as shown and described.

Third, the combination and arrangement of the frame A, lever F, and standard *h*, pivoted to the front axle as shown.

Fourth, the combination with the chute C, and belt B, of the spout I, and the suspended platform H, arranged and operating as and for the purpose set forth.

No. 52,985.—JOHN H FRIEDERICH, Rochester, N. Y.—*Carpet Fastener.*—March 6, 1866.—This invention consists of a screw knob and screw socket inserted in the floor with the carpet between them.

Claim.—As a new article of manufacture, the carpet fastener made up of the screw knob *a b c*, and the socket *d f*, the whole arranged and operating substantially as herein set forth.

No. 52,986.—WILLIAM J. FRYER, Jr., and WILLIAM FREEBORN, New York, N. Y.—*Railroad Car Wheel.*—March 6, 1866.—This invention consists in the construction of a car wheel formed of two concentric wheels, the inner wheel having a hollow concavo-convex periphery, and the outer wheel made with its inner surface and annular projecting flange, forming a corresponding shape and configuration; the two wheels being united together by a sinuous line of elastic packing, and bolted together.

Claim.—A railroad-car wheel constructed substantially as herein described—that is to say, formed of two concentric wheels, the inner wheel A made with a hollow concavo-convex periphery, and the outer wheel B made with its inner surface and annular side flange *b* to form a corresponding concavo-convex line, the two wheels being united together at a point about equidistant between the rim and the hub by a sinuous line of packing C, together with the annular concavo-convex ring D, bolted to the disk of the outer wheel B, the separate parts united forming a complete whole, in the manner and for the purpose specified.

No. 52,987.—CHARLES D. GIBSON, New York, N. Y.—*Reflector for Head Lights.*—March 6, 1866.—This invention is described by the claim.

Claim.—The combination of a series of small reflecting planes or surfaces which are straight and flat in at least one direction, in the construction of reflectors for head lights, when said reflecting surfaces are arranged in annular series or rows within the reflector, all substantially in the manner and for the purpose herein set forth.

Also, a conical reflecting centre plate in the base or rear end of the reflector, behind the lamps, at the focal point thereof, in combination with a series of straight and flat reflecting planes, when arranged substantially as herein described.

Also, a centrally inclined reflecting rim, in combination with the front end or edge of a head-light reflector, constructed substantially in the manner and for the purpose herein set forth.

No. 52,988.—JACOB H. GIBSON, McDonough, N. Y.—*Invalid Bedstead.*—March 6, 1866.—In this invention the head and foot sections of the inside rack of the bedstead are composed of looped supporting wires fixed to a series of levers so pivoted to the side rails of the bedstead that they may by mutually acting upon one another, by power applied at one end of the bed, convert the bed into a seat with a back support of any desired inclination.

Claim.—First, constructing the bottom of the bed of the looped wires D D, attached substantially as and for the purposes set forth.

Second, attaching the bottom of a bed, or part thereof, to a series of levers pivoted to the side rails of a bedstead, so that they may, by mutually acting upon one another by power applied at one end of the bed, convert the bed into a seat of such inclination as may be desired, substantially in the manner set forth.

No. 52,989.—RICHARD GILLASPIE, New Richmond, Ohio.—*Seed Planter.*—March 6, 1866.—This invention consists in the combination and arrangement of the plough-box and coverer, with the mechanism for operating the planter, whereby the seed may be dropped in check rows at the precise point where it is required, to coincide with hills of adjacent rows.

Claim.—The seed box D, double-armed crank *d*, rod *c*, stop *f*, spring *h*, adjustable coverer *k*, the whole constructed and arranged in combination with a plough, substantially as and for the purpose herein specified.

No. 52,990.—A. L. and B. F. GILLILAND, Littleton, Ill.—*Gang Plough.*—March 6, 1866.—This invention consists of devices for regulating the depth of the ploughs, and also for giving them more or less land.

Claim.—First, attaching the plough beams to the axle B by means of the rock shaft D, pro-

vided with the arms *e e* and lever C, arranged to operate substantially as and for the purpose set forth.

Second, supporting one end of the rock shaft D in the adjustable bearing *o*, in combination with the lever E, arranged as shown and described.

Third, the tongue H, attached to the front end of the plough beams, in combination with the segment G and rod *m*, provided with the jam nuts *l l*, as shown and described.

No. 52,991.—Levi A. Gould, Santa Clara, Cal.—*Pump.*—March 6, 1866.—This invention consists in arranging within the barrel of the pump two pistons or buckets, and operating the same in such a manner, through devices connecting them with the handle or brake lever of the pump, that as one bucket ascends the other descends, and *vice versa*, whereby a perpetual flow of liquid through the pump is obtained, and without the use of an air chamber.

Claim.—Connecting the rod *h* and hollow sleeve *t*, respectively, of two buckets *f* and *f* of a pump, to a common actuating lever handle or brake on which the rod *h* is hung, through the sector-shaped gears *s* and *t*, and arm *u*, all arranged and operating as and for the purpose specified.

No. 52,992.—Wellington Green, Kinzua, Penn.—*Cutting Box.*—March 6, 1866.—This invention consists in the combination and arrangement of the spring, treadle, knife, box frame, pitmans, and adjustable set screws, whereby the knife is adjusted in relation to the mouth of the box in such a manner as to compensate for the wear of the knife.

Claim.—First, the combination of the wooden spring W and pitman A′ with each other, and with the knife frame and the frame of the cutting box, substantially as described and for the purpose set forth.

Second, the combination and arrangement of the pitman V with the knife frame and with the treadle, substantially as described and for the purpose set forth.

Third, the combination and arrangement of the set screws P with the knife O, and with the knife frame, substantially as described and for the purpose set forth.

No. 52,993.—Julius Guttman, Somersworth, N. H.—*Artificial Teeth.*—March 6, 1866.—This invention consists in attaching a piece of metal to the lower set of artificial teeth by means of an additional row of pins forming a zig-zag line with those by which the rubber base is usually fastened.

Claim.—An artificial tooth or set of teeth provided with pins set in a zig-zag line, substantially as and for the purposes set forth.

No. 52,994.—A. K. Haxstun, Fort Edward, N. Y.—*Manufacture of Paper Pulp from Straw.*—March 6, 1866.—This invention consists in subjecting the straw to the action of boiling water until the knots become soft like the rest of the straw. To every 100 pounds of straw is added 42 gallons of alkaline solution of a strength of 4 degrees Baumé. The boiler is then closed and rotated, and the contents heated until a pressure of seventy pounds is attained.

Claim.—The within-described process of reducing straw to paper pulp by first treating the same in a revolving boiler or vessel with boiling water, and therewith an alkaline solution under pressure, substantially as set forth.

No. 52,995.—Anson Hardy, F. L. Walker and G. A. Walker, Boston, Mass.—*Lock.*—March 6, 1866; antedated February 28, 1866.—This invention is designed as an improvement in locks constructed upon the general principle of those patented to L. Yale, January 13, 1844, and to S. F. Bacon, July 12, 1859, and consists in a narrow, rectangular, instead of cylindrical, key-hole, arranging the plungers in zig-zag lines along the edges only of said key-hole, and a key of peculiar form for operating said plungers. A further improvement consists in two sliding bars, one extending from the key hole to the circumference of the revolving disk, and lying within a groove upon the inner surface of said disk, and the other lying in a similar groove across the inner surface of the ring, so arranged that when in conjunction the inner end of the outermost bar will be forced by a spring into the groove in the disk, driving thus the inner bar before it, and so that its inner end will cross the key hole, but which inner end is so bevelled as to be operated upon and thrown out by the key.

Claim.—The key constructed as described, viz: with its operative portion of a thickness equal only to about the diameter of that part of the plungers which enters the key hole, plus the amount needed for a flange on either side, when provided with inclines on its edges, each of which has a flange, said flanges being part on one side and part on the other of each edge of the key; also, in such a lock, provided with such a key hole as described, the arrangement of the plungers so as to enter the key hole in a zig-zag manner, substantially as and for the purpose specified.

Also, in a lock with a cylinder, ring, and plungers, the employment of the check slide, when arranged at the inner end of the key hole and operating substantially as specified.

No. 52,996.—Lewis Hebard and William S. Brown, Lexington, Cal.—*Machine for Moulding Bullets.*—March 6, 1866; antedated March 2, 1866.—In this machine a pair of arms

are pivoted at one end; the other ends are alternately forced together by cams, and apart by a spring. Near the working ends of the arms are arranged cutting dies for cutting off a sufficient portion of the rod, as it is intermittingly fed downward toward the dies to form a bullet. Under these dies, and attached to the same arms, are moulds which receive the cut portion and swage it to the proper form. Around the moulds works a circular knife, which moves up immediately after the bullet is swaged and trims off any portion that protrudes from the mould's joint.

Claim.—First, the cutting dies *f f*, in combination with the cutters on the wedges *g g*, all constructed and operated substantially as shown, for the purpose of cutting off the lead above the place of the mould.

Second, the combination of the shears J J′ with the cutting dies *f* and wedges *g*, substantially as described.

Third, the rod *o*, passing through the centre of the mould P′, and operated by the cams *c*, as described, for the purpose of freeing the bullet from the mould.

Fourth, in combination with the mould P′, the knife Q′ for cutting off the surplus lead from the edges of the moulds, constructed and operated substantially as shown.

Fifth, the mode, substantially as herein described, of feeding the lead to the moulds, to wit: by means of the tube E, the feed wheel D, with its pins U U′, and the cams H on the upper side of the cam wheel G.

No. 52,997.—Charles H. Helms, Poughkeepsie, N. Y.—*Heel Breasting Machine.*—March 6, 1866.—This invention consists in the combination of two adjustable jaws as a means of holding the heel, and a cutter and gauge plate combined with the said jaws, and a lever with pawl and rack operating on one of the jaws.

Claim.—First, the combination of the two adjustable jaws B and C, as a means of holding the heel of a boot or shoe while being cut or breasted, as hereinbefore set forth.

Second, the straight-edge cutter, in combination with the two adjustable jaws B and C, for the purpose hereinbefore set forth.

Third, the gauge plate M, in combination with the two adjustable jaws B and C, for the purposes hereinbefore set forth.

Fourth, the lever E, and pawl and rack, substantially as and for the purposes hereinbefore set forth, in combination with the adjustable jaws B and C, for the purposes described.

No. 52,998.—Isaiah Henton, Shelbyville, Ill.—*Cultivator.*—March 6, 1866.—This invention consists in the combination of a vibrating frame with the main frame of the machine, and so attaching the plough beams that they can be moved vertically and laterally, at pleasure.

Claim.—The combination and arrangement of the carriage frame A, the vibrating frame B, pivoted to A, the beams *k*, hangers *i*, standards *n*, and the hand lever *o*, with the sheaves *q*, and cords or chains *r*, substantially as herein specified and for the purpose described.

No. 52,999.—Wm. O. Hills, Nottingham, N. H.—*Burglar Alarm.*—March 6, 1866.—This invention consists in passing a tube from an air pump along the doors and windows of houses. At each door or window a stopper, while the door or window is closed, keeps the air from the tube, but opening the door or sash lifts off the stopper, lets in the air, and by movement of the pump piston the alarm is operated.

Claim.—The combination of the branch *a* and the valve stopper *c*, or equivalents thereof, with a sash or door and the air pipe A, of an alarm apparatus of the kind to which reference has been hereinbefore made.

Also, the combination of the rod *r*, or its equivalent, with the branch tube *a*, when used substantially as and for the purpose specified.

No 53,000.—Joseph Hollen, Blair county, Penn.—*Rotatory Knitting Machine.*—March 6, 1866.—This invention is designed as an improvement on the machine patented by Joseph Hollen, September 2, 1862.—The thread guide and stitch hooks are pivoted to the same lever, and derive their several up and down, forward and backward motions from it, and from their own inclines, and slots in fixed uprights. They have, also, lateral motions. The motion of the machine may be reversed without adjustment, so as to knit in either direction, as when knitting the heel of a stocking.

Claim.—First, the needle A, the same consisting of a straight piece of wire having one end flattened, pointed and bent, so as to produce the hook a^2, and shoulder a^3, thereat, as set forth in the drawings, the said needle being also secured rigidly in the cylinder which carries it, so that its said hook a^2 shall be radial in its position thereon, as described and specified.

Second, the stitch lifting hook C, the slotted stay H, and the vibrating arms I I, the same being constructed and arranged to operate together as and for the purposes described.

Third, the carrier D, when constructed as described, and arranged to operate in combination with the needles A, fabric stays B, and stitch lifter C, as described and set forth.

No. 53,001.—Robert B. Hugunin, Cleveland, Ohio.—*Roller and Fastening for Clothes Wringers.*—March 6, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, as a new article of manufacture, shaft-fastened elastic rollers, when made

in combination with hollow metal shafts, with two or more openings in the same with cloth or wire-cloth, or both combined, prepared with raw gum and consisting of two or more pieces passed through the openings of the said shafts and the sides lapped around, and elastic vulcanizable gum vulcanized thereon, for the purposes specified.

Second, the combination of the clamps H H, thumb screws I I, and screw plates J J, as described, for the purposes specified.

No. 53,002.—ROBERT B. HUGUNIN, Cleveland, Ohio.—*Manufacture of Bottle Stoppers, Caster Wheels, Syringe Pistons, &c.*—March 6, 1866.—In this invention, a glass or other suitable core for a bottle stopper is formed, with a depression; around this is wrapped cloth and a vulcanizable composition; the whole is then subjected to heat sufficient to vulcanize the gum. A similar process is also applicable in the manufacture of caster wheels, syringe pistons, &c.

Claim.—First, forming articles such as are herein described by vulcanizing rubber or equivalent gum upon cloth or other fabric, in the manner and for the purposes herein set forth.

Second, as new articles of manufacture, the improved bottle stoppers, casters, gun cleaners, and plungers, herein described.

No. 53,003.—LIVERAS HULL, Charlestown, Mass.—*Turning Lathes for Wood.*—March 6, 1866.—This invention has for its object the turning of whip stocks, so as to give the proper or desired taper to the stock, and finish them by working all the parts of the machine which produce such results, automatically.

Claim.—A combination consisting not only of mechanism for revolving the whip stock, and moving it longitudinally, but of two cylindrical burs or cutters and a mechanism whereby such burs or cutters, while being revolved, are moved either toward or apart from one another, as may be required, in order to enable them to produce the necessary diametric variation of the whip stock from end to end of it, the said combination principally or substantially consisting of the carriage B, with its puppets *b c*, mandrels *c' d*, and their gears *f g*, the jaw levers *i i*, the cone *k*, the screw *l*, the gears *m m*, the shaft *o*, with its feather connection, the belt *s*, the two wheels *t t*, and their shafts *u v*, the burs C C, the pulleys a^2 c^2, the endless band b^2, and the shaft d^2, the pattern or guide rail *k'*, the rods *a' a'*, and the levers *b' h'*, the whole being arranged and connected so as to operate in manner substantially as explained.

Also, the combination of the same and a mechanism for moving the two burs or cutters in direction of their axes, in order to prevent the said burs from becoming clogged by the material removed by them from a whip stock, such mechanism as hereinbefore described, consisting of the cams *r'*, shaft *s'*, gears *t' u'*, shaft *v'*, worm gear *a'*, and the screw *x'* fixed on the shaft *o*.

Also, the combination for supporting the whip stock near the cutters, the same consisting of the two plates *y z'*, provided with angular openings a^3 a^3, and springs d^3, and arranged relatively to each other and supported in manner and so as to operate substantially as described.

Also, the adjustable or movable pattern *k'*, its box *l'*, and the adjusting screws and nuts thereof, combined or arranged together in manner substantially as described.

Also, the combination of the two frames D E, provided with the screw *y*, and nuts *z z*, and constituting each of the cutter carriages, as set forth.

Also, the combination of the contractile connecting rods *a' a'* with the cutter carriages or frames D E D E, and the levers *b'* and *h'*, arranged and applied in manner and so as to operate with the pattern *k'* substantially as specified.

Also, the combination of the two rotary mandrels *c' d*, and the mechanism to rotate them synchronously, as described, with one or more burs or cutters C C, so arranged that when in revolution against an article held to and revolved by the mandrels, such bur or burs shall cut into the article in a direction lengthwise rather than crosswise of it.

Also, the combination of the screw a^5 or straining mechanism with the two rotary mandrels *c d*, their jaws and one or more cutters or burs C C, arranged substantially as specified, such mandrels being provided with mechanism for synchronously rotating them as described.

No. 53,004.—CLARK S. HUTCHINSON, Burlington, N. J.—*Building Block.*—March 6, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, a building block or brick A, so formed that when laid in a wall and breaking joint, the holes in the blocks of one course correspond with the holes in the blocks of the course below, substantially as described.

Second, the block A, made with the central elongated hole C, and openings C' at the ends, or with the opening C' at one end only, as and for the purpose substantially as described.

Third, a building block, composed of lime, sand, with or without Ohio mineral or other cement, when made in the form and for the purpose described.

Fourth, the water-proof face B, attached to the building block A, substantially as and for the purpose described.

No. 53,005.—JOSEPH INGELS, Milton, Ind.—*Grain Drill.*—March 6, 1866.—This invention consists in locating a system of wheels in the feeder-head, so that by changing these

wheels the amount of seed sown can be varied; also, in the construction of the feed wheel, the cups or grooves of which meet in the centre, thus avoiding the crushing of the grain, and insuring a continuous discharge of grain.

Claim —First, the changeable gearing placed inside of the hopper head.

Second, the series, two or more, of slots in the hopper head or other plate, for the purpose of adjusting the movable axis to suit the change of wheels.

Third, joining the diagonal teeth of the feed wheel in the middle of the roller.

Fourth, the V-shaped projection *k* on the floor of the concave, for the purpose described.

No. 53,006.—MARSHALL INGERSOLL, Grafton, Ohio.—*Railroad Car Brake.*—March 6, 1866.—This invention consists of a car brake operated by a lever, or by concussion of the cars in colliding with each other, by means of a rod extending lengthwise of the car and connected to the brakes.

Claim.—First, the cam H, cord *m*, and the pin *n'*, in combination with the lever *a*, rod D, and links *e*, when arranged and operating in the manner and for the purpose set forth.

Second, in combination with the above, the socket *d*, rod D, bolts *a'*, shoes C, and lever D', when arranged in the manner and for the purpose described.

No. 53,007.—J. JOHNSON, Saginaw, Mich., and C. W. SINGER, Anderson's Store, Va.—*Pump.*—March 6, 1866.—In this invention three valved pistons, arranged at different altitudes in the same cylinder, are so operated by three cams upon a single shaft, as that one of the said pistons shall be always carrying water upwards.

Claim —The arrangement of the plungers B C D, consisting of the followers *a'*, valves *b*, and valve seats *a*, in combination with the rod *e*, the tube *e'*, rods J J', and eccentrics, when operating conjointly, as and for the purpose set forth.

No. 53,008.—EDWARD JONES, San Francisco, Cal.—*Paddle Wheel.*—March 6, 1866.—This invention is described by the claim.

Claim.—A paddle wheel provided with floats, convex on their outer edges, and increasing in width towards the outer ends, arranged relatively to the wheel shaft and to the sides of the vessel, substantially as described and represented.

No. 53,009.—JOHN P. LAIRD, Altoona, Penn.—*Bearing of Locomotive Axles.*—March 6, 1866.—This invention consists in the application to a locomotive of a driving axle adapted to boxes which can slide laterally in the frame of the locomotive; the said axle and boxes being combined with a truck frame having an axle and wheels.

Claim.—First, the application to a locomotive, substantially in the manner described, of a driving axle, adapted to boxes which can slide laterally in the frame of the locomotive, for the purpose specified.

Second, the combination of the said driving axle and its sliding boxes with the truck frame I and its axle L and wheels M, the whole being arranged and operating substantially as and for the purpose herein set forth.

No. 53,010.—PETER B. LAIRD, West Danville, Vt.—*Composition for Welding and Refining Steel.*—March 6, 1866.—This invention consists of a composition of proto-sulphate of iron, hydrochlorate of ammonia, muriate of soda, silex or sand, and pulverized glass.

Claim.—The welding composition, as made of the ingredients and in the manner substantially as described.

No. 53,011.—T. H. LEAVITT, Boston, Mass.—*Peat Machine.*—March 6, 1866.—This invention consists of a casing through which passes a shaft, on which is arranged a series of cutters and crushers, which disintegrate and grind the peat as it passes down through the casing. The peat, after passing through the casing, is received in a hopper which is open at the bottom, in order that the peat may be forced into the open ends of the moulding boxes as they pass under the hopper. The boxes are carried forward by means of an apron, and are removed as they are filled with peat; the boxes are provided with pins to perforate the peat blocks in order to hasten the drying.

Claim.—First, the revolving crushers I and K, or their equivalents, in combination with the stationary crushers H and J, or their equivalents, operating as set forth for the purpose specified.

Second, the revolving rubbers M, in combination with the plates N, or their equivalents, for the purpose described.

Third, the knives D, so formed as to cut up the peat and feed it into the machine, as set forth.

Fourth, the hopper P, with its sweeps or mixers Q, for the purpose of expelling the air from the mass of prepared peat as it comes from the condensing machinery.

Fifth, the moulds Y, having open ends, in combination with the peculiar form of the bottom of the hopper, whereby the peat is compacted and pressed into the moulds, as described.

Sixth, the pins *m* in the moulds, operating as described for the purpose set forth.

No. 53,012.—John F. Lauth, Reading, Penn.—*Machinery for Rolling Iron.*—March 6, 1866.—This invention consists of side rollers applied to the ordinary rolling machines, whereby the edges of the metal, both previous to its passage between the rollers and after leaving the same, are subjected to a pressure sufficient to cause the metal to be rolled of a uniform width throughout, and with smooth edges. Provision is made for placing the rollers at a greater or less distance apart to suit the width of the metal. The rollers at the discharge side of the pressure rolls are made to rotate at a greater speed than those at the feed side.

Claim.—First, the combination of the main rolls B B and two pairs of side rollers F F F′ F′, constructed and arranged substantially as and for the purposes set forth.

Second, the adjusting of said rollers through the medium of the screws K and gears *e*, substantially as shown and described.

Third, in combination with the subject-matter of the first claim, giving the side rollers F′ at the discharge side of the rollers B B a quicker motion thanthe rollers F at the feed side of the same, substantially as and for the purpose set forth.

No. 53,013.—Thomas Longham, Philadelphia, Penn.—*Knitting Machine.*—March 6, 1866.—The object of this invention is to knit different patterns and colors, and with stripes lengthwise or crosswise or both, upon the same machine. For longitudinal stripes a series of reciprocating thread guides is used, and for cross-stripes a single traversing guide; the guides may be turned out of operative action when desired. The pattern for ribbed goods is determined by a pattern cylinder which brings certain needles into action as desired. A single spring, centrally secured in the needle stock, acts on both its latches.

Claim.—First, the combination with the double-ended self-acting needles B, of two or more thread guides I I′, each of which operates over a portion only of the needles, substantially as and for the purpose described.

Second, the combination with a knitting machine, in which double-ended needles are used, of a cam, so constructed as to turn back the latches of the needles when brought into contact with the same, for the purpose specified.

Third, a pattern cylinder O and plates Y, or their equivalents, combined with the needles B and their operating cams, substantially as and for the purpose set forth.

Fourth, the plates *n n*, secured to the edges of the plate A between the grooves *a*, substantially as and for the purpose specified.

No. 53,014.—T. H. Leavitt, Boston, Mass.—*Material for Dusting the Moulds for Peat Machines.*—March 6, 1866.—This invention is fully described by the claim.

Claim.—The use of powdered peat for the purpose of preventing the prepared peat from adhering to the moulds, as set forth.

No. 53,015.—John T. Lewis, Pittston, Penn.—*Thief Alarm.*—March 6, 1866.—This invention consists of an alarm or detector, to be inserted in the ground, which, when the least pressure is exerted upon it by any person walking over such ground, will cause an instant explosion to occur, that, if it does not injure the person, will at least so frighten and alarm him as to cause him to make a hasty retreat without securing the intended plunder.

Claim.—The tube or spout A, either with or without the safety valve H, in combination with the bottle B, or other suitable receptacle for the explosive material, having a cap tube *c*, when arranged together, so as to operate in the manner and for the purpose specified.

No. 53,016.—Horace W. Love, Brooklyn, N. Y.—*Screw Wrench.*—March 6, 1866.—This invention consists of a movable jaw, operated and adjusted by a screw; said jaw slides in a groove parallel with the stationary jaw of the wrench.

Claim.—The improvement in constructing and operating my diagonal, adjustable screw wrench, as and for the purposes substantially described in the foregoing specification.

No. 53,017.—Charles A. Mallory, Cambridge, Mass.—*Buckle.*—March 6, 1866.—In this invention a double buckle is formed in two parts; the prongs of one passing through the prongs of the other and thus forming the hinge of the buckle and the tongue of the other half.

Claim.—A double buckle, of two pieces of metal, constructed substantially as and for the purpose set forth.

No. 53,018.—F. B. Marble, Columbus, Ohio.—*Machine for Jointing Tops and Leaves of Tables.*—March 6, 1866.—This invention consists in having the bed, upon which the table leaf is placed, made adjustable by elevating, depressing, or inclining it to any desired angle, and presenting the work to the rotating cutters while being held in place by a clamp, and travelling upon a carriage.

Claim.—First, in a machine which is capable of making the joints of table leaves, substantially as described, the combination and arrangement of the rotary cutter head H, table B, carriage C, hinged supports E E and F, substantially as and for the purpose described.

Second, the combination and arrangement of the clamp or follower, substantially as described, with the table B, carriage C, hinged supports E E F, and rotary cutter head H, all operating substantially as and for the purpose set forth.

No. 53,019.—JOHN MATTHEWS, Jr., New York, N. Y.—*Apparatus for Bottling Liquids.*—March 6, 1866.—This invention consists in connecting the filling head with the upper and lower part of the foundation by means of tubes. The liquid runs into the bottle by its own weight, and the air escaping from the bottle enters the foundation through the connecting tube to supply the place of the liquid taken therefrom. By this means all escape of gas is prevented.

Claim.—First, the method herein described of bottling liquids under pressure, by which constant and uniform pressure is maintained upon the liquid, as well when passing into the bottle as when in the fountain, and by which the escape of gas during the process of bottling is prevented, all substantially as herein set forth.

Second, the pipe *n*, applied and arranged with reference to the fountain B, pipe *m*, and filling head *x*, substantially as and for the purpose herein set forth.

No. 53,020.—A. Y. MCDONALD, Dubuque, Iowa.—*Balance.*—March 6, 1866.—This invention will be readily understood from the claim and engraving.

Claim.—The general arrangement of the scale herein described, the same consisting in suspending the platform upon which the material to be weighed is placed to and upon the swinging frame *g*, connected by and through the weight *u*, with the index hand *r*, substantially in the manner and operating as specified.

No. 53,021.—SARAH A. MCGILL, Cincinnati, Ohio.—*Vegetable Grater.*—March 6, 1866.—This invention consists in the arrangement and combination of parts designated by the claim, and will be readily understood by reference to the drawing.

Claim.—The combination of the aforesaid grater D, the retaining plate C, with standards B B, and dish A, with the retaining leaf *a'''*, the whole arranged and combined substantially in the manner and for the purpose herein set forth.

No. 53,022.—W. C. MCGILL and A J. GIBSON, Cincinnati, Ohio.—*Drilling and Hoisting Machine.*—March 6, 1866.—This invention consists in the combination and arrangement of parts designated by the claim, and will be readily understood by reference to the drawing.

Claim.—First, the revolving platform and derrick, as and for the purpose herein described and set forth.

Second, the revolving derrick and drill, combined and operating substantially as herein described.

Third, slides and parts I *i'*, J *j*, and *i*, in combination with cord F.

Fourth, the combination of the revolving platform B, drum or windlass *g'*, and derrick, for the purpose hereinbefore mentioned.

No. 53,023.—WILLIAM S. MEAD, New York, N. Y.—*Journal and Box.*—March 6, 1866.—A description of this invention is contained in the claim, and duly shown in its adaptation, in the drawings.

Claim.—First, securing the chilled cast-iron sleeve on to the journal to prevent it from turning, in manner substantially as herein described.

Second, connecting the rollers with the frame in which they turn by means of ball journals, substantially as described.

Third, relieving the friction due to end play and pressure between the end of the journal and the box, by means of the chilled balls and surfaces, substantially as described.

No. 53,024.—I. C. MERRITT, Wyoming, N. Y.—*Stove-pipe Damper.*—March 6, 1866.—In this invention a perforated cone, with lips of the perforations extending inward to arrest cinders, &c., is situated above an annular disk having downward converging arms, which meet around a central shaft. A close disk, covering the aperture, is moved by a handle playing in a slanting slot, so as to raise it when turned one way, and lower it when turned the other. In the first case the products of combustion flow up through the depending arms and round the edges of the close disk.

Claim.—First, the perforated cone E, provided with the lips or ledges *p p* for arresting the cinders, in combination with the stove-pipe A and damper disks C D, substantially as and for the purpose herein specified.

Second, the combined construction and arrangement of the concave annular disk C, with its downwardly converging arms *f f*, and central guide shaft *h*, and of the central concave disk D, as and for the purpose herein set forth.

No. 53,025.—JOHN B. MIGNAULT, Chelsea, Mass.—*Machine for Rolling File Blanks.*—March 6, 1866.—In this machine two disk-like concentric rolls are arranged upon two parallel vertical axes, whose journal boxes, respectively, are susceptible of movement horizontally towards or from one another. Each roll carries two cam disks, one upon its upper and the other upon its lower surface, said disks being provided with concentric slots and screws passing through the same into the roll, by means of which the cams are adjusted and confined in any desired position, and behind each of those compound rolls there is a friction roller, against which the cam disks bear during their rotation. Thus the rolls proper are

caused to approach towards or to recede from each other just in proportion to the eccentricity of the cam disks.

Claim —First, a pair of circular rollers, placed opposite to each other, and having cams or shapers affixed to their ends for the purpose of governing the distance of the rollers from each other.

Second, the rollers R R′, constructed as herein set forth, in combination with the fixed friction rollers V V′, upon which the peripheries of the cams are held in contact.

No. 53,026.—JOHN B. MOODY, Cincinnati, Ohio.—*Breech-loading Ordnance.*—March 6, 1866.—In this invention the cannon is bored entirely through, having a breech block held in place by a stirrup or breech strap swinging laterally upon trunnions above and below the piece. The breech block is pivoted to the breech strap, and has its rear of a spherical form fitting a corresponding concave seat in the back of the breech strap.

Claim.—First, forming the semicircular end of the breech piece with the same radius and centre as the inside semicircle of the end of the stirrup, substantially as and for the purposes set forth.

Second, pivoting the breech piece D upon the pins E E, substantially as and for the purposes set forth.

No. 53,027.—JAMES C. MOORE, Philadelphia, Penn.—*Lantern.*—March 6, 1866; antedated February 24, 1866.—This invention consists principally in the constructing of the lamp of the lantern, extending its sides upwards, so as to afford a flange with springs playing into a ledge on the bottom of the case, and thus connecting the two together, allowing a notch in said ledge for the shaft of the wick regulator.

Claim.—Extending the sides of the lamp A upward, above the oil reservoir of the same, and into contact with the horizontal stem of the wick adjuster C, attaching the springs D D thereto, so that their catches d' d' shall project through the same, as described, and turning the lower edge of the band b' inward, so as to produce the narrow flange b^2 around the same, to receive the catches d' d' thereon, and thus enabling the operator to secure the lamp to, and detach it from, the lantern without changing the position of the wick-adjusting spindle C, all substantially as and for the purposes described.

No. 53,028.—CHARLES T. and ELI W. MOORMAN, Jamestown, Ohio.—*Sorghum Evaporator.*—March 6, 1866.—This invention consists of an evaporating pan divided into compartments by a partition. On the side of each evaporator is arranged a trough, with an inclined bottom to receive the scum. The pan is supported on wheels which are attached to slides, which may be raised or lowered by means of chains attached to a windlass situated above the pan. By this means the pan may be elevated at pleasure, and each partition may be brought over the fire by means of wheels upon which the pan travels.

Claim.—First, the arrangement of the pan provided with partitions over the furnace in the manner herein set forth, and operating it as and for the purpose herein specified.

Second, the arrangement of the bars X X on the ends of the pan and the pulleys *e e*, as and for the purpose specified.

Third, the arrangement of the bars X X, pulleys *e e*, slides G G, chains H H, levers I I, with the chains K K, and windlass J, substantially in the manner and for the purpose herein specified.

Fourth, the troughs F, constructed and arranged with the pan in the manner and for the purpose herein set forth.

No. 53,029.—E. P. MORSE, Batavia, N. Y.—*Stove-pipe Drum.*—March 6, 1866.—In this invention, near the circumference and inside the cylinder, are several small pipes open at the top and bottom; centrally located is a larger tube with a conical deflecting cap at the top and bottom, to throw the smoke, &c., against the other tubes. A cap may be placed on top and bottom of the device, with pipes to lead off the heat, as may be desired.

Claim.—A drum for stove-pipes, consisting of the exterior wall B, air pipes D D, flues A A, and reflectors F F, constructed and arranged substantially as described and for the purpose set forth.

No. 53,030.—M. P. MURPHY, assignor to OREN E. WILSON, New York, N. Y.—*Burglar Alarm.*—March 6, 1866.—This invention will be readily understood by reference to the claim and engraving.

Claim.—The combination of the alarm C, fastening device A, and catch I, when arranged together so as to operate substantially as described and for the purpose specified.

No. 53,031.—JAMES NAYLOR, Providence, R. I.—*Steam Trap.*—March 6, 1866.—The object of this invention is to enable the water of condensed steam to escape, and at the same time to prevent the steam from being exhausted through the trap. Its novelty consists in the arrangement of the trap, containing a float, the outer vessel with its pipes, following nuts, and lateral openings.

Claim.—The arrangement of the trap A, containing a float, the outer vessel E, with the

pipes G and B, the said pipes being secured by following nuts J, and pipe B, having communication with the trap through lateral opening D, substantially as and for the purpose above set forth.

No. 53,032.—THOMAS NELSON, Carthage, Ill.—*Process for Making Emery Wheels.*—March 6, 1866.—This invention consists in the thorough incorporation of natural or artificial silicious substances with emery or other gritty material.

Claim.—The production of a solid and tenacious grinding or polishing substance, by uniting particles of disintegrated emery, or other equivalent gritty material with each other, through the vitrefaction of an alkaline silicious substance combined therewith, substantially in the manner herein set forth.

No. 53,033.—DAVID OLIVER, Carthage, Ill.—*Hedge-cutting Machine.*—March 6, 1866.—This invention consists in the construction and arrangement of the different parts of the machine, so as to admit of the hedge being trimmed at any point by means of levers and pins, which gives the cutters their adjustability in any position.

Claim.—First, the combination of the cutter wheels or cylinders N and O with the adjustable bridge trees J and K, and with the shafts G and H, substantially as described and for the purpose set forth.

Second, the combination of the bridge trees J and K with the supports W and X, and with the cutter wheels N and O, substantially as described and for the purpose set forth.

Third, the combination of Baylor's universal joint I with the cutter-wheel shafts G and H of a hedge trimmer, substantially as described and for the purpose set forth.

Fourth, the combination of the guards R with the cutter wheels N and O, substantially as described and for the purpose set forth.

Fifth, the combination of the levers S and T with the bridge trees J and K, substantially as described and for the purpose set forth.

No. 53,034.—DUBOIS D. PARMELEE, New York, N. Y., assignor to CHARLES L. RICHARDS and THOS. C. SMITH.—*Mould for Vulcanizing Rubber.*—March 6, 1866.—The object of this invention is to make vulcanizing moulds more durable than the ordinary metal moulds, which are corroded and rapidly destroyed during the process of vulcanization by the sulphur of the compound. The claims clearly describe the invention.

Claim.—The manufacture of porcelain moulds for purposes of vulcanization, substantially as herein described.

Also, the vulcanization of the hard rubber compound in moulds made of porcelain, or its homologues.

No. 53,035.—A. B. PARSONS, Dunton, Ill.—*Washing Machine.*—March 6, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The combination and arrangement of the removable reciprocating frame B D E, the corrugated rubber C, with the removable frame G, and the peculiarly constructed and arranged rollers F, when all are constructed, arranged, and operated as and for the purposes herein shown and set forth.

No. 53,036.—SETH D. PAUL, Lawrence, Mass.—*Mules for Spinning.*—March 6, 1866.—This invention consists in machinery for obtaining a greater speed of the spindles after the carriage is out, than while it is coming cut, for the purpose of getting, in the shortest possible time, that amount of twist which it is generally necessary to obtain after the carriage has arrived at the end of its traverse; also, in machinery for deriving the twist motion from the large band pulley, so as to secure the same amount of twist under all circumstances; also, in machinery for effecting the slow return of the carriage from the outer end of its traverse, until the twist is all taken in; and also in machinery for preventing, during the last-mentioned operation, the winding-on ratchet from falling into gear, and thus checking the backing off motion of the mule.

Claim.—First, pulley A, pulley B, clutch box C, cone wheel D, friction pulley E, disk F, lever G, lever H, cam I and cam J, or their equivalents, arranged and operating substantially as described.

Second, twist plate N, pin O, clutch P, cam Q, lever R, or their equivalents, arranged and operating substantially as described.

Third, the arrangement of gear W, gear X, shaft Y, gear Z, gear *a*, shaft *b*, stand *c*, worm *d*, gear *e*, shaft *f*, gear *g*, and gear *h*, or their equivalents, substantially as described for the purpose specified.

Fourth, lever *i*, latch *j*, shaft *k*, worm *l*, clutch box *n*, pin *o*, plate *w*, or their equivalents, arranged and operating substantially as described.

Fifth, cam 2, lever 3, worm 4, shaft 5, and rack 6, or their equivalents, arranged and operating substantially as described.

Sixth, lever 21, finger 22, and stand or plate 25, or their equivalents, arranged and operating substantially as described.

Seventh, the combination of latch 33, with relieving lever 31, constructed and operating substantially as described and for the purpose specified.

No. 53,037.—D. H. Payne and George Boxley, Troy, N. Y.—*Car Coupling.*—March 6, 1866.—This invention consists in the use of shackles provided with hooks at their outer ends, and fitted on shafts which have a coil spring connected at one end and a ratchet at the opposite end, into which a pawl catches; the shackles having chains attached passing around guide pulleys on the end of the platforms, whereby the cars as they come in contact will be connected with certainty, and compensating for any difference of height in the two adjacent cars.

Claim.—The shackles C C connected to the shafts B B, in combination with the springs E, ratchets D, and pawls I, all arranged in connection with the chains or their equivalents and draw-heads, substantially as and for the purpose herein set forth.

No. 53,038.—Charles G. Pease, Charlestown, Mass.—*Chair for Photographic Purposes.*—March 6, 1866.—This invention will be understood by reference to the claim.

Claim.—The arrangement of the adjustable head rest so as to work through the chair back, and the construction of such back with an openings to receive the said rest, as specified.

No. 53,039.—John G. Perry, South Kingston, R. I.—*Mowing Machine.*—March 6, 1866.—This invention consists in the use of a slotted, hollow axle, upon which the driving wheels and the main escapement or gear wheel are mounted; motion is imparted to the cutters through an upright, attached to the heel of the cutter bar and to a rod reciprocating within the hollow tubular axle, said rod being connected through the slots in the axle with the vibrating escapement lever. The drag bar is hinged to the front, grain-side corner of the main frame, and is braced in position at its heel end, which is nearly in line with the rear frame piece, by a rod or brace hinged thereto and running diagonally forward and upward, connecting with the frame near the outer end of the tubular axle.

Claim.—First, the hollow axle D, with one or more connecting openings in it between the main wheels, substantially as herein described and for the purposes set forth.

Second, the arrangement of the escapement wheel *a*, upon the open hollow main shaft, in combination with the main wheels B B, substantially as described herein and for the purpose set forth.

Third, the rods J and *l*, in combination with the cutter-bar, substantially as herein described and for the purposes set forth.

Fourth, the pawls *u* and *t*, ratchet wheels *r r*, and friction or pressure plates *s*, when made self-operating, in combination with a mowing machine or harvester, substantially as herein described and for the purpose set forth.

Fifth the combination of the drag bar 4, (or shoe,) and self-clearing oblique brace rod *y*, substantially as herein described and for the purposes set forth.

No. 53,040.—John G. Perry, South Kingston, R. I.—*Reaping and Mowing Machine.*—March 6, 1866.—This invention consists in the particular arrangement, in connection with a stationary hollow axle, of the gearing and jointed pitman or connecting rod, whereby motion is communicated from the driving wheels to the cutting apparatus, through the hollow axle.

Claim.—First, the combination and arrangement of the bevel gears *f* and *q*, crank *u*, and pitman *v*, with the hollow stationary axle *x*, substantially as herein described and for the purpose set forth.

Second, the jointed connecting rod *m*, in combination with the hollow axle, substantially as herein described and for the purpose set forth.

No. 53,041.—Stephen Puffer, assignor to himself and William H. Lyons, Oxford, N. Y.—*Invalid Bedstead.*—March 6, 1866.—This invention consists of a device for raising and lowering the rack of an invalid bedstead, by means of a sliding lever, having a longitudinal slot and a suitable pin or projection in combination with a notched or ratchet wheel and pawl fixed at the ends of windlasses connected by straps with the head and foot sections of the rack.

Claim.—The sliding lever N, provided with slot *i* and pin *j* in combination with notched wheels M and rollers K and L, substantially in the manner and for the purpose herein set forth.

Second, the construction and arrangement of the inner frame or rack F G H, in combination with the lever N, rollers K L, cleats *d*, and connecting straps *e* and *f*, substantially in the manner and for the purpose herein set forth.

No. 53,042.—Emmett Quinn, Washington, D. C.—*Automatic Boiler Feeder.*—March 6, 1866; antedated February 3, 1866.—The object of this invention is to supply boilers with the requisite quantity of water, and no more, at all times when in use, and to do this with unerring certainty. Its novelty consists in the combination of the box with a steam generator and sliding valves, and in the arrangement of the pipe for supplying the chamber; the steam pipe connected with the boiler at the steam space; the ingress pipe connected with the boiler at the water space; the projections, stuffing-boxes, the shaft, with its eccentric and pulley, for giving motion to the slides.

Claim.—First, the combination of the box with a steam generator and the sliding valves *d d.*

Second, the arrangement of the pipe *f*, for supplying the chamber *e*, steam pipe *g*, connected with the boiler at the steam space; the ingress pipe *h*, connected with the boiler at its water space; the projections 1 1 and 2 2, stuffing-boxes 3 and 4, the shaft 5, with its eccentrics and pulley, whereby to give motion to the slides *a a*, substantially in the manner and for the purpose as herein set forth.

No. 53,043.—L. J. RANDALL, Chardon, Ohio.—*Preparing Cheese for Market.*—March 6, 1866.—This invention consists in pressing cheese in a series of two or more hoops, arranged on the platters, in place of one large hoop—making a number of small cheeses of cylindrical form, all pressed at the same time by one continuous operation.

Claim.—The herein described mode of pressing cheese separately in a series of hoops under pressure simultaneously by the action of the screw, for the purpose set forth, and arranged as specified.

No 53,044.—F. BUMPF, Cold Spring, N. Y.—*Crane.*—March 6, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The adaptation of an ordinary hand crane to a power crane, by means of the loose-toothed rim D, placed on the wheel or bed C, on the crane post or shaft D, driven from the power shaft I, by a pinion J, and communicating motion by a pinion H, to a shaft F, which has its bearings in a bracket E, attached to the wheel or bed C, and connected with the windlass of the crane by a belt chain or gearing, substantially as shown and described.

No. 53,045.—ALFRED V. RYDER, New York, N. Y.—*Trunk and Bureau.*—March 6, 1866.—This invention is described by the claim, and will be readily understood by reference to the engraving

Claim —The combined trunk and bureau herein described, the same consisting of the parts A B, hinged together at C, and provided with drawers D, as and for the purpose explained.

No. 53,046.—E. P. RYDER, Brooklyn, N. Y.—*Treadle Motion.*—March 6, 1866.—This invention consists in connecting the treadle to and with the driving shaft of the machine, through a novel arrangement of parts, by means of which the liability of turning the driving shaft in the wrong direction, when the machine is first started, is entirely obviated.

Claim.—The combination of the pitman rod N, hung to the treadle of a sewing or other machine, cords M M^2, connecting said rod with a loose sleeve or collar L of the driving shaft, and pawl R, hung on said sleeve, which through jaws S acts upon the fixed annular ring T of the driving shaft, arranged together and so as to operate substantially in the manner and for the purpose described.

No. 53,047.—PETER A. SALVOTTI, New York, N. Y.—*Telegraph Cable.*—March 6, 1866.—The nature of this invention is described by the claim.

Claim.—The conducting core of a cable for telegraphic purposes, consisting of a helix formed of a plurality of wires without a central core, substantially as set forth.

Also, the use of protecting rings C, in combination with the conducting wires and the armor wires, substantially as described.

Also, the combination of the pliable filling with the rings, substantially as and for the purpose described.

Also, as an improved article of manufacture, a telegraph cable, made substantially as herein shown and described.

No. 53,048.—RUFUS SCOTT, Watertown, N. Y.—*Turning Cheese.*—March 6, 1866.—This invention consists in the employment of turning disks, in combination with a peculiarly constructed rail counter or table, used for the purpose of curing cheese.

Claim.—First, the method herein described of turning cheese, for the purpose of drying the same by the employment of a rail counter and turning disks, substantially as herein set forth.

Second, the use and employment of circular flanged disks, in combination with a rail counter, substantially as and for the purposes herein set forth.

No. 53,049.—JOSEPH S. SEAMAN, Pittsburg, Penn.—*Apparatus for Rolling Metals.*—March 6, 1866.—This invention is described by the claim.

Claim.—The use of a pair of rolls revolving in the same direction, and each having a groove of the shape of the arc of a circle, in combination with a guttered guide box, or equivalent device for guiding the cylindrical rod, bar or tube to be rolled and straightened in its passage through the groove of the rolls, at the proper angle (of about 45 degrees to the axis of the rolls) at which the rod or bar will have the longest surface bearing in a right line on the face of the rolls for the purpose of rolling and straightening the cylindrical bar, rod or tube, substantially in the manner hereinbefore described.

No. 53,050.—LEVI SHEPARD, Gold Hill, Nevada.—*Scale for Weighing.*—March 6, 1866.—This invention consists in attaching the weight to a vertical arm which extends downward at

a right angle to a horizontal arm which is formed in one piece with, or is rigidly attached to, the first, and supports the pan upon which the object to be weighed is placed.

Claim.—The horizontal pan, supporting arm *l*, and vertical pendent weight arm *g*, mounted at their right angle on the pivot *c*, in combination with the graduated scale *m* and pan frame *o p r s t u*, all arranged to operate in the manner and for the purposes specified.

No. 53,051.—SAMUEL S. and JEREMIAH G. SHERMAN, McHenry, Ill.—*Harvester Rake.*—March 6, 1866.—This invention belongs to that class of automatic rakes which revolve with, and are operated by, the mechanism which moves the reel; and consists in a construction of parts such that the rake is enabled to revolve with the reel, and also to operate upon a quadrant-shaped platform, sweeping the grain therefrom headforemost, endwise and sidewise, in the arc of a circle, so as to leave a clear space for the passage of the machine during the next round.

Claim.—First, in combination with the rake E and arm C, the lever J, cam K, and connecting rod F, for the purpose and in the manner substantially as described.

Second, in combination with the rake E, the cam R, latch L and rod M, for the purpose of securing and holding the rake when retracted.

Third, in combination with the rake E, latch L, and rod M, the movable cam P, for the purpose of controlling the operation of the rake.

Fourth, in combination with the rake E, the check-plate H, for the purpose of arresting the motion of the arms C and D while the rake is sweeping the grain from the platform.

No. 53,052.—ISRAEL E. SMITH, York, Penn. —*Washing Machine.*—March 6, 1866.—This invention consists of a hollow slatted cylinder, resting upon journals vertically adjustable, and containing hollow wooden balls filled with lead; the adjustable journals are held in position by braces.

Claim.—The combination of the slatted cylinder D, the balls C C and the adjusting plates B B, held in place by the braces *a a*, the whole arranged and combined as above described, for the purpose and in the manner herein set forth.

No. 53,053.—WILLIAM SNYDER, Wooster, Ohio.—*Farm Gate.*—March 6, 1866.—This invention belongs to that class of gates adapted to be slid back along suitable bearings in the gate post until they reach a balanced position, and then to be swung around on their bearings, as on a centre The invention consists of a low post, planted about midway between the front and back posts, and supporting a roller upon which the bottom rail of the gate rests as it is sliding backward and forward; also, of a combined hinge and roller bearing, by means of which the gate is swung around.

Claim.—First, a sliding gate, whose rails extend beyond it forward mounting by gradually increasing lengths from bottom to top, as and for the purpose set forth.

Second, the combination with the low post K, with a sliding and swinging gate to support the front end of the gate in sliding back and forth.

Third, the swivel E F, journalled both above and below, and enclosing one of the bars of the gate, as and for the purposes shown and described.

Fourth, the roller L, in the described combination with the low post K, and a sliding gate, constructed as and for the purpose specified.

No. 53,054.—GEORGE W. SPEAR, New York, N. Y.—*Well Boring.*—March 6, 1866.—This invention consists of an axially perforated or tubular reamer, combined with a detachable dibble; also, of such a reamer combined with a drill; also, of such a reamer combined with a detachable tubular shaft or shank for working the same; also, of such a reamer and such a shaft, combined with a ramming tube for driving down the reamer; and also, of such a reamer, such a shaft, and a drill, combined with a driving tube.

Claim.—First, the combination of an axially perforated or tubular reamer with a detachable dibble, substantially as and for the purpose described.

Second, the combination of a drill with an axially perforated or tubular reamer, substantially in the manner and for the purpose described.

Third, the combination of an axially perforated or tubular reamer with a detachable tubular shank or shaft, substantially as described.

Fourth, the combination of a dibble and axially perforated or tubular reamer and a tubular shank with a driving tube.

Fifth, the combination of an axially perforated or tubular reamer, a detachable tubular shank, and a drill with a driving tube.

No. 53,055.—ROYAL W. STONE and H. A. KENDRICK, Rowe, Mass.—*Dish Drainer and Dryer.*—March 6, 1866.—This invention will be readily understood by reference to the claim and engraving.

Claim.—The arrangement and combination of the braces A, latches C I, slats D, and rods H, as herein described and for the purposes set forth.

No. 53,056.—Warren Tanner, Chicago, Ill., Isaiah S. Hyatt, Rockford, Ill., and John W. Hyatt, Jr., Albany, N. Y., assignors to Warren Tanner.—*Forming Artificial Stones for Grinding and Polishing.*—March 6, 1866.—This invention consists of a composition of twelve pounds of sulphur, twenty-four pounds of sharp emery, and six pounds of flour of emery.

Claim.—The combination of coarse grit with flour grit and a binding material, substantially as and for the purposes herein set forth.

No. 53,057.—Clark Tompkins, Troy, N. Y.—*Harvester.*—March 6, 1866.—This invention consists in the arrangement of a hand lever armed with an upright curved wedge, in connection with sliding rods and the two forked levers and springs which operate the sliding clutches, so that by the action of the single hand lever both clutches are simultaneously engaged or disengaged from the pinions on opposite ends of the driving shaft, and the cutters thrown in or out of gear.

Claim.—The combination and arrangement of a hand lever A, wedge or cam *q*, rods *m m'*, clutch levers B B', and springs *e e'*, with the shaft D, ratchet clutches C C', ratchet wheels or pinions *f* G *f'* G', and frame or platform K, substantially as herein set forth.

No. 53,058.—Alfred Thomas, Worcester, Mass.—*Device for Securing the Tail Stocks of Lathes.*—March 6, 1866.—This invention consists in the arrangement of couple bolts, the heads of which are held in a movable joint, one extending upward to a bar or bolt in the tail stock, from which it is suspended, so as to be allowed to swing. The other extends downward, and is similarly connected to a bridge, a screw pushing against the movable joint and forcing the bolts out of perpendicular, thus holding the tail stock to the bed rigidly.

Claim.—First, the mechanism called the compound bolt, constructed as described, in combination with lugs *i i*, suspension bar H, substantially the same and for the purpose set forth.

Second, in combination with the compound bolt, the tightening screw D, ratchet wheels *e e*, pawls *f f*, and lever G, or their equivalents, substantially in the manner and for the purpose set forth.

No. 53,059.—W. B. Treadwell, Albany, N. Y.—*Grate and Grate Bars.*—March 6, 1866.—In this invention, in a fixed or movable frame, are curved or centrally depressed bars, with journals on their extremities; also projecting eyes underneath, to which is attached a connecting rod.

Claim.—First, so applying curved or centrally depressed grate bars B to a fixed or movable frame A, and connecting said bars together, that they are susceptible of receiving a vibrating motion about their axes, substantially as described.

Second, the construction of curved grate bars with journals on their extremities, and projecting eyes, or their equivalents, for receiving a connecting rod K, substantially as described.

Third, the combination of curved or depressed grate bars B and a tilting frame A, substantially as described.

No. 53,060.—Emma A. Tyler, Buffalo, N. Y.—*Hair-crimping Pin.*—March 6, 1866.—This invention consists of a hair pin formed like a staple, but with a deep indentation or dip at the centre of the arch. The hair being wound around the two legs of the pin, and an elastic band passed into the indentation and between the legs of the pin, embraces and crimps the hair.

Claim.—A hair pin adapted for crimping, substantially as described.

No. 53,061.—Joseph Von Achen, Bloomfield, Iowa.—*Hand Garden Plough.*—March 6, 1866.—This invention consists in the particular construction and arrangement of garden ploughs, or that class of ploughs which are pushed by the operator.

Claim.—First, the combination in a garden plough, of otherwise ordinary or suitable construction, of a stationary clevis on the forward end of the plough beam, with a guide wheel hung in a swinging frame vertically adjustable in relation to the said clevis, substantially as described.

Second, the combination in a garden plough, with a plough stock fixed to the beam under the arrangement described, of a reversible shovel constructed and adjusted in the manner and for the purposes herein set forth.

Third, the arrangement of the cross handles on either side of the plough beam, in combination with the arched yoke on the rear end of the beam, substantially as set forth.

No. 53,062.—Peter H. Van der Weyde, Philadelphia, Penn.—*Still for Petroleum.*—March 6, 1866.—This invention consists in the use of three or more stills connected with condensers. The stills are all heated by the same fire, and are so arranged that the heat may be easily regulated by the operator, and are connected in such a manner that the condensed vapor of each still is collected in a proper receptacle, and may be returned to the first still without being exposed to the air.

Claim.—First, the combination of three, four, or more stills in the manner described, in order to obtain with a single fire and one single operation all the different volatile products of the petroleum, namely, lubricating oil, kerosene, benzine, naphtha, or gasoline.

Second, in order to increase as far as possible the quantity of kerosene or illuminating oil, the manner of transferring the heated products of one still to another without exposing them to the air or losing by evaporation.

Third, the peculiar manner of arranging the cooling apparatus, so as to economize cold water and heat.

No. 53,063.—JAMES A. VANKERSEN, Kalamazoo, Mich.—*Machine for Coring and Quartering Apples.*—March 6, 1866.—This invention consists of a tube for coring and four radial knives for quartering apples, operated by a cross-bar and bow spring, and guided by stationary rods.

Claim.—First, the combination of the fixed guide rods *a a*, horizontal cross-arm C, and a cutter B, the blades *c' c'* of which are adapted to serve as guides for the lower end of this cutter, substantially as described.

Second, the combination of a bow spring D with a reciprocating cutter B and fixed guide rods *a a*, substantially as described.

No. 53,064.—JOHN C. and JAMES W. WANDELL, New York, N. Y.—*Elevator.*—March 6, 1866.—The invention consists of endless chains arranged to work over drums in an upright frame, said drums being driven by a separate or independent chain, the endless chains having platforms constructed and operated in such manner that they may pass around the drums, the whole mechanism being arranged so that the material may be raised by a continuous movement of the elevator in one direction.

Claim.—An elevator composed of endless chains C C, or their equivalents, working over or around suitable drums B B in a frame A, and having platforms E attached, arranged with arms F, which are also connected with the chains C C, substantially as and for the purpose herein set forth.

Also, the supplemental or driving chain D when used in combination with the chains C C, platforms, and arms, substantially as and for the purpose specified.

Also, the brace bars H when fitted to the arms F of the platforms E, substantially in the manner as and for the purpose set forth.

No. 53,065.—DARIUS WELLINGTON, Boston, Mass., assignor to CORNELIUS WELLINGTON.—*Peat Machine.*—March 6, 1866.—This invention consists of a frame having two rotary corrugated wheels mounted thereon. Around each an apron passes. The peat passes from the hopper between the aprons, and, being compressed by the rollers, the water passes through the meshes of the aprons, and is conducted off by means of a trough. The peat is then passed on to an endless band under a knife, and then under a beater, and a stamp is so arranged as to compress the peat, after which it is divided into blocks by the disks and knife.

Claim.—The employment of the toothed or corrugated expressing rolls having fibrous aprons extending around them, and operating together substantially as set forth.

Also, in combination with the rolls, operating as set forth, the conveyor *g*, for carrying the compressed peat from the rolls to the successive action of the cutting, compressing, and dividing mechanism, substantially as set forth.

Also, in combination with the compressing rolls and the conveyer, operating as set forth, the cutting mechanism, the compressing mechanism, and the dividing mechanism, operating separately or together, in connection with the expressing rolls, substantially as set forth.

No. 53,066.—ZENAS WHEELER, San Francisco, Cal.—*Ore Crusher.*—March 6, 1866; antedated February 19, 1866.—This invention consists of an ore crusher having a stationary and a movable jaw, the latter being operated by a cam shaft, and adjusted at its lower end by screws that are hinged, so as to produce a crushing and grinding or rubbing motion. The jaw dies are formed in two or more pieces, so as to be replaced as they wear out.

Claim.—First, the combination, with the stationary jaw *g*, of the movable jaw *s*, when the latter is operated by the cam shaft *o*, and adjusted at its lower end by means of the screw bolts *t t*, which are hinged thereto and adapted to produce the motion described.

Second, making the jaw dies in two or more sections or parts, substantially as herein described and for the purposes specified.

No. 53,067.—JAMES D. WHELPLEY, Boston, Mass.—*Steam-injected Water Motor.*—March 6, 1866.—This invention consists of a vessel for containing the supply of water, and in which is placed an instrument acting upon the principle of the "Giffard Injector," which gives motion to the water and carries it forward to the motor. The motor is composed of a case enclosing two revolving wheels, with floats projecting from them against which the water acts to revolve them An intermediate vessel is employed which is placed between the injector and the motor, and is provided with an air vessel, which, in its arrangement with a governor connected to the valve, which admits steam to the injector, serves to regulate the motion of the motor. The object of the invention is the perfect utilization of all the heat

contained in the steam, by condensing all of such steam before it reaches the motor, and thus allowing it to expend its entire force in giving motion to the ingoing body of water.

Claim.—First, the construction of the piston H and the abutment I with equal or multiplied radii, and so recessing the abutment and gearing the piston and abutment together as to make them revolve with equal or multiple velocity.

Second, the combination of the recessed abutment I with the recessed core K, substantially as described, for the purpose of avoiding the dead point.

Third, the arrangement of the double pistons H H as drawn, for the purpose of avoiding the dead point.

Fourth, the combination of the piston H with the disk O, carrying the ring Z, and ring packing Z′, the pipe box S, its cog wheel N, and with the fixed spindle *r*, having its oil chamber *p*, and perpendicular pipes *t t*, substantially as and for the purpose described.

Fifth, the combination of the friction rings *o*, with the frame M, and the pipe box S, and disk O, for the purpose of supporting the lateral pressure of the water during the movement of the engine.

Sixth, the elastic automatically-reversible packing and packing plates of the piston H, formed by the curved and bevelled surfaces of the metallic pieces *m m′ m″* hinged together, with its rubber or other elastic support or packing *k*, on either side, compressible and expansible, substantially as described.

Seventh, the arrangement of the ring Z, on the disk O, carrying on its edges spring packing rings Z′, substantially as and for the purpose described.

Eighth, the arrangement of the governor G and its valve, regulating the supply of steam, which forces the water, in connection with the air chamber containing the air spring E, pressing upon said column of water, for the purpose of rendering equable the motion of the engine, substantially as described.

Ninth, in an engine the power of which is derived from the heat of steam, the complete condensation of the steam between the boiler and piston, whether such condensation is effected by passing the steam through a chilled chamber or by introducing into the induction pipe C a jet of steam and a stream of cold water at one and the same time, the volume of water introduced being the difference of volume lost by condensing the steam, the whole being accomplished by the arrangement of parts substantially as described.

No. 53,068.—James D. Whelpley and Jacob J. Storer, Boston, Mass.—*Apparatus for removing Dust and Gases from Air.*—March 6, 1866.—This invention consists of a fan-blower or draught wheel, mounted on a hollow shaft, conveying liquid and perforated with numerous small holes to distribute spray in the case of the draft wheel; also, of a separate spray wheel on same shaft as the draught wheel, and in a separate but communicating chamber, (the dashers of said spray wheel being arranged to throw spray towards the shaft,) whereby two successive supplies or qualities of spray are thrown into the gas-charged or dust-laden air; said spray holding in solution certain chemical reagents for the purpose of cleansing the air.

Claim.—First, the combination of hollow shaft A, having holes *g* as described, with draught wheel D, as and for the purpose described.

Second, the placing spray wheel C and draught wheel D in separate but communicating chambers E and F, as and for the purpose described.

Third, the construction of the arms of spray wheel C with the ladle-like ends *k* as drawn, so as to throw spray towards the shaft.

Fourth, the combination of the hollow shaft A, having holes *g* only in the limits of the chambers F, with spray wheel C, as and for the purpose described.

Fifth, the furnishing of spray to the dust or gas-laden air in successive supplies of the same or different qualities, as and for the purpose described.

Sixth, the use of spray charged with chemical reagents, as described and for the purposes stated, or mingled with steam or air so charged.

No. 53,069.—J. H. Whitenack, Somerville, N. J.—*Harvester.*—March 6, 1866.—This invention consists in attaching teeth to the sickle bars of grain and grass harvesters in such a manner that they may be readily applied to the bars and detached from them, thereby greatly facilitating the grinding of the teeth and the keeping of them in proper working order, and also enabling the operator, in case of the breaking of a tooth, to remove the same and apply a new one in a very short space of time.

Claim.—The described method of securing the teeth between the plates A A of the sickle bar, namely, the L-shaped slots *b b* in the teeth, the pins *c c*, and the tightening screw C.

No. 53,070.—Asaph Whitmarsh, East Bridgewater, Mass.—*Horse Hay-fork.*—March 6, 1866.—This invention consists in pivoting a rod to the handle, bent near its upper end so as to form a neck which holds the bail in position while the load is hoisted, but upon reaching the proper height the upper end of said rod is brought in contact with the hoisting block, and thereby depressed so as to automatically release the fork and discharge the load. The tines in the head are arranged in the form of a curve, the centre tines being highest.

Claim.—A hay fork provided with a self-acting tripper C, having a recess *c* made to ope-

rate with the bail B and the block F, substantially in the manner and for the purposes described.

Also, the above-described arrangement of the prongs of the fork in a curve, whereby those in the middle of the fork head are higher than those at the ends of it, the same being as and for the purpose specified.

No. 53,071.—RUSSEL WILDMAN, Danbury, Conn.—*Fur Blower.*—March 6, 1866.—This invention consists of a cam and lever for the purpose of producing a drop motion of the wire cover of a fur blowing machine, so as to prevent the adhesion of any fur thereto.

Claim.—Preventing the adherence of short fur to the wire covered top by the action of the cam and lever, substantially as herein shown and described.

No. 53,072.—W. W. WILEY, Edina, Mo.—*Combined Seeding Machine, Roller and Harrow.*—March 6, 1866.—This invention consists in attaching a rotary harrow to a frame in which a roller is placed, and in such a manner that the harrow may be rotated from the roller and be capable of being adjusted higher or lower, as circumstances may require. A seed distributing device is also placed on the frame and operated from the roller; all being constructed and arranged in such a manner that the several parts above mentioned will operate conjointly and in a perfect manner.

Claim.—The combination of the rotary harrow and reciprocating seed distributing device, when used in connection with a roller or rollers, and operated therefrom in the manner substantially as herein shown and described.

No. 53,073.—WALTER S. WILKINSON, Baltimore, Md.—*Packing for Oil Wells.*—March 6, 1866.—This invention consists of a ring of soft metal; its lower part flaring over a conical enlargement below it, is followed by a cylinder of firm material, the striking down of which expands the soft packing ring outward against the well; said parts being adapted for elevation by an interior groove into which enter hooks attached to the interior cylindrical rod.

Claim.—First, the packing cylinder E, of lead or other flexible substance, permanently attached to the cylinder F, adapted to be elevated, as described, resting upon the expansion ring D, and beneath the tubing to be operated by the driver H, substantially as set forth.

Second, in combination with the foregoing, the spring catches G G, as arranged in relation to the seat L, to operate the packing cylinder E, in the manner set forth.

No. 53,074.—ARTHUR G. WILSON, Chicago, Ill.—*Combined Funnel and Cocks.*—March 6, 1866.—The funnel is so fixed upon a three-way cock that the flow may be into the funnel from the barrel, or the barrel flow may be cut off and the funnel may be emptied; or the flow may be directly through the cock without entering the funnel. A deflector near the bottom of the funnel serves to break the force of the flow. The funnel may be graduated as a measure.

Claim.—A funnel in which are arranged and combined the deflector I and the cock B, all substantially as described.

No. 53,075.—FREDERICK WOOD, Bridgeport, Conn.—*Landau Carriage Doors.*—March 6, 1866.—This invention consists in an arrangement for enabling the doors of landau and other similarly constructed carriages to be opened while the glass is up, without the necessity of first letting down the glass.

Claim.—The glass frame holders C C′, constructed and operating as described.

No. 53,076.—HUGH WRIGHT, Pittsburg, Penn.—*Jug Top.*—March 6, 1866.—This invention consists of a jug top made of sheet metal, having the neck, part of the cover, half the hinge and rim formed from a seamless sheet metal cap, producing, with the addition of a spout and cover, a strong and compact jug top.

Claim.—Forming the neck, part of the cover, half the hinge, and the rim of a sheet metal jug top from a seamless sheet metal cap, as specified.

No. 53,077.—JAMES BEEBE, Chicago, Ill., assignor to himself and H. HUBER, Bloody Run, Penn.—*Stove Pipe, Drum and Oven.*—March 6, 1866.—In this invention the drum has several tubular openings arranged alternately at right angles with each other; when desired any one of these can be used as an oven, by closing one end and attaching a door to the other.

Claim.—First, the combination of cylinder A, with the two series of tubes or tubular openings D D″, &c., and D′ D‴, &c., inserted therein, as and for the purpose shown and represented.

Second, the closing of one end of any number of the tubes or tubular openings D D′ D″, &c., and the attachment of oven doors at the other ends, as D′, in combination with cylinder A and the two series of tubes D D″, &c., and D′ D‴, &c., inserted therein, as and for the purpose shown and represented.

No. 53,078.—JOHN S. BRESSLER, Milwaukee, Wis., assignor to ANTHONY IHMS, same place.—*Process for making Beer.*—March 6, 1866.—This invention consists of a combination of maize and malt, in equal parts, with water in the proportion of 900 gallons to 60 bushels

each of the other ingredients, at a temperature of from 140° to 163° Fahrenheit, for the purpose of extracting at once from the maize its sugar and gum, without first forming starch.

Claim.—The process hereinbefore described of preparing mash for brewing beer by the use of corn or maize and malt, in quantities and manner as set forth, with the application of water in quantities and under degrees of heat, as described, and in the manner substantially as set forth, by uniting the malt and the maize by one manipulation, and washing the two together before any chemical change has taken place in either grain.

No. 53,079.—JAMES HOLDCRAFT, assignor to himself and WILLIAM HOLDCRAFT, Philadelphia, Penn.—*Gauge Cock for Steam Boilers.*—March 6, 1866.—This invention consists in placing a washer in the flexible joint formed by the movable handle and the socket on the body of the cock. This washer is placed between the wearing or rubbing surfaces with the view of preventing an undue amount of friction on such surfaces.

Claim.—The employment of a washer G, in connection with flexible joints, in the manner and for the purpose substantially as described.

No. 53,080.—WILLIAM R. LANDFEAR, Hartford, Conn., assignor to himself and DAVID WHITTEMORE, North Bridgewater, Mass.—*Eyelet Machine.*—March 6, 1866; antedated October 9, 1865.—In this invention the strip of metal out of which the eyelets are to be cut is fed over the female die under a slide provided with an opening through which the punch works, and also a die for giving the finishing shape to the eyelet, and carries it away from the said die over an opening in the anvil through which it is discharged. The punch is hollow and has at some distance above the end a short shoulder against which a stationary former within the female die punches out the disk from the bottom of the eyelet. A sleeve working around the said former forces the unfinished eyelet up into the forming die in the slide which passes over to the female die when the punch has recoiled, by which it is swaged into its finished shape, when the slide returns and the eyelet is ejected by an ejecting punch.

Claim.—The combination and arrangement of the die A, the male former B, the punch C, the female former C′, the elevator D, and the flanching die *c*.

Also, the combination of the die *d*, and the expelling passage *f*, with the female former C′, the punch C, the male former B, and the die A, all constructed and arranged substantially as described.

Also. the combination of the die *d*, the expelling passage *f*, the female former C′, the punch C, the male former B, the elevator D, and the die *c*.

Also, the combination and arrangement of the teat or spur *a*, with the male former B, the die A, the punch *c*, and the female former C′, all constructed and arranged as described.

Also, the combination and arrangement of the annular groove *b*, with the elevator D, and the flanching die *c*.

No. 53,081.—HENRY LOWENBERG, assignor to himself and EMILE GRANIER, New York, N. Y —*Paper for Postage Stamps.*—March 6, 1866.—This invention is clearly described by the claim.

Claim.—The use of prussiate of potash and oxalic acid or such other alkaline salts or acids in or on the paper to be used for writing or printing, or both, so that when any attempt is made by the use of any chemical agents to remove such writing or printing, or both, the paper will perceptibly change its color, but the writing will be more affixed to the paper.

No. 53,082.—B. G. MARTIN, Philadelphia, Penn., assignor to himself, W. SANDFORD, New York, N. Y., and T. M. DAVIS, and L. H. WALTON, Philadelphia, Penn.—*Apparatus for Cooling Liquids.*—March 6, 1866; antedated March 2, 1866.—This invention consists of two vertical cases of thin metal placed opposite each other, and joined together by plates. Each case has a number of projecting boxes attached to it, the said boxes being closed at one end and communicating with the cases at the other. Midway from the top and bottom of each box extends a plate from the exterior wall of the case to near the outer end of the box. The top of each box is corrugated, water is made to flow through the zig-zag channels in the cases, and the wort is passed through the channel formed by the boxes attached to the cases.

Claim.—First, the two vertical casings A and A′, with their boxes and plates, the whole being constructed and arranged substantially as and for the purpose specified.

Second, so constructing the said vertical casings, with their boxes and plates, that they may be adjustable to and from each other, as and for the purpose described.

Third, the reservoir D, with its holes *n*, in combination with the said casings and boxes.

Fourth, in combination with the said casings and boxes the upper plates *h* of the latter, corrugated or otherwise formed, so that the liquid may flow along the same in separate channels.

No. 53,083.—MONROE MORSE, assignor to himself and AARON H. MORSE, Franklin, Mass.—*Apparatus for Pressing Hats.*—March 6, 1866.—This invention consists of a presser in which the male die is yielding, having a disk divided into sections, and by a screw pressed centrally against a flexible diaphragm the interior yielding mass is urged forward.

Claim.—The construction and arrangement of the elastic head D′, the series of sectors E, the grooved cylinder D, or its equivalent, and the screw H, as applied to the chambered block C, of the flexible presser B, substantially in manner and so as to operate as specified.

No. 53,084.—FRANZ MÜLLER, assignor to LYMAN S. PAINE, Mokena, Ill.—*Farm Gate.*—March 6, 1866.—This invention consists in so constructing a gate that a brace or support is formed at one end in combination with the rail of the fence, and sliding thereon by means of rollers whereby a person on horseback or afoot is enabled to open or close the gate as desired.

Claim.—Attaching a rear extension to a gate to serve as a brace and support when used in connection with stationary bar or slat *f*, on which to slide longitudinally as and for the purposes set forth.

No. 53,085.—JOHN F. PIERCE, assignor to himself, ISAAC PIERCE, and JAMES S. HALL, Holland Patent, N. Y.—*Horse Hay-fork.*—March 6, 1866.—This invention consists in the use of a spiral shaft and head provided with tines, in connection with a pulley, stop, and swivelled arm, so arranged with the hoisting rope that the strain upon said rope will revolve the shaft when released and discharge the load.

Claim.—The arrangement of the swivel head *o*, jointed arm B, guide G, sheave D, pawl H, spiral shaft A, head piece C, and tines E, constructed, arranged, and operating substantially as herein described and for the purpose set forth.

No. 53,086.—ALEXANDER SELKIRK, assignor to ELIZA J. SELKIRK, Albany, N. Y.—*Button.*—March 6, 1866.—In this invention the shank inside the cloth enters a disk against the resistance of a soft rubber spring, and receiving a quarter turn, is settled in position.

Claim.—The stem *a*, with the lips *b b*, in combination with the secondary button B, constructed of the metal plates *f* and *g*, with the rubber disk *d*, substantially in the manner hereinbefore described and for the purpose set forth.

No. 53,087.—JOSEPH SIMMONDS, assignor to himself and SAMUEL G. LAW, Brooklyn, N. Y.—*Steam Blower.*—March 6, 1866.—In this invention the steam is let in through the hollow shaft, and is discharged through a series of curved arms which are connected by perforated figures running parallel with the shaft, and also by plates of sheet metal which fill up the square between said curved arms in such a manner that by the action of the steam a rapid revolving motion is imparted to said wheel, and a mixed current of steam and air is created which can be employed with good advantage under a pressure, or as a ventilator.

Claim.—First, a steam blower, constructed of a hollow shaft *a*, with radiating arms *b*, and connecting pipes C, in combination with wings *d*, substantially as and for the purpose described.

Second, the segmental chamber B, in combination with a steam blower, constructed as and for the purposes set forth.

No. 53,088.—GREENLEAF STACKPOLE, New York, N. Y., assignor to himself, N. F. SPEAR, Elizabeth, N. J., and C. and D. COBB, Boston, Mass.—*Device for Canal Propulsion.*—March 6, 1866; antedated February 28, 1866.—This invention consists of a rail of timber, or other material, suitably supported and extending the whole length of the canal; also, of wheels on a canal-boat rotated by machinery within the boat, and arranged to take hold of the aforesaid rod and then draw the boat along. Said rail may be supported in the air above the boat, or in the water beneath or alongside of her, and said wheels may be vertical or horizontal accordingly.

Claim.—First, in combination with the bar B, or its equivalent wheels D′ D^2, and suitable power within the boat C, the sleeves E′ E^2, and shafts *d′* d^2, adapted to slide one upon the other, substantially in the manner and for the purpose set forth.

Second, in combination with the sleeves E′ E^2, shafts *d′* d^2, and wheels D′ D^2, the transverse sleeve E^3, adapted to slide on the shaft *c*, and allow the wheels D′ D^2 to yield both vertically and laterally, substantially in the manner and for the purpose herein set forth.

No. 53,089.—OSCAR D. WOODBURY, assignor to THOMAS B. DE FOREST, Derby, Conn.—*Lamp.*—March 6, 1866.—This invention consists in so constructing and arranging the pawl relatively to the wick and adjusting wheel as to arrest the descent of the wick before it has passed below the control of the wheel, substantially as and for the purpose specified.

Claim.—The arrangement of the pawl *a* relatively to the wick and adjusting wheel so as to arrest the descent of the wick before it has passed below the control of the adjusting wheel, substantially as and for the purpose specified.

No. 53,090.—GUSTAVE BOUSIGUES, called BLEY, Rheims, France.—*Method of Fastening Corks in Bottles.*—March 6, 1866.—This invention consists in securing the twine to the bottle in such a manner that after passing over the cork its ends will pass under the wire, so that by pulling the ends of the twine upward the wire will be loosened and detached from the bottle and the twine removed.

Claim.—The method herein described of fastening stopering corks for liquids, whereby the twine and wire fastenings can be removed by the hand without the aid or intervention of any instrument, as set forth.

No. 53,091.—DANIEL MCDOWELL, Kingston, West Indies.—*Cleaning Tubes of Boilers.*—March 6, 1866.—This invention consists of a pipe connected with the dome of a steam boiler or other part thereof whence steam can be obtained, said pipe being provided with joints to enable it to be turned in any direction, and with a nozzle that is to be inserted in the boiler flues for the purpose of conducting jets of steam thereinto in order to clean the same.

Claim.—The arrangement of the jointed pipes F, with the nozzle-pipe E, and the auxiliary opening D, whereby to clean the flues or tubes of steam generators, as herein set forth.

No. 53,092.—STANISLAS SOREL, Paris, France.—*Composition to be used as a Cement and Mouding Composition.*—March 6, 1866.—This invention consists of a composition of magnesia and chloride of magnesium, to which insoluble substances and coloring matter may be added if desired.

Claim.—As a new product, the magnesia cement, or cement having a magnesia base, composed substantially as herein described, for the purpose of forming various substances used in the arts, by agglomeration or moulding, as herein set forth.

No. 53,093.—PETER SPENCE, Newton Heath, England.—*Manufacture of White Lead.*—March 6, 1866.—This invention consists in dissolving substances containing oxide and carbonate of lead in a solution of caustic soda, and precipitating the carbonate of lead from the solution by means of carbonic acid. The carbonate of soda formed during the operation being held in solution may be removed from the precipitate, and converted into caustic soda, to be again used as above described.

Claim.—The production of white lead by dissolving substances containing oxide or carbonate of lead in caustic alkaline solutions, and then precipitating the required carbonate.

No. 53,094.—STEPHEN M. ALLEN, Woburn, Mass.—*Manufacture of Water-proof Paper.*—March 13, 1866.—This invention will be understood by reference to the claims and engravings.

Claim.—First, a pulp and paper made from vegetable fibrous substances in which the original resinous or albuminous matter is retained with or without the addition of foreign resinous or gelatinous substances, substantially as set forth.

Second, a pulp and paper made from vegetable fibre, containing a large proportion of its natural gum, when pulped, in combination with pulped untanned animal fibre; and this, whether mixed or not with other foreign resinous or gelatinous substances, as set forth.

Third, the printing, enamelling, glazing, or varnishing of a paper prepared in the manner and having the properties herein described.

No. 53,095.—STEPHEN M. ALLEN, Woburn, Mass.—*Belting for Machinery*,—March 13 1866.—This invention consists in pulping scraps of untanned leather, and mixing with the material pulped vegetable fibre, from which the natural gummy matters have not been separated, and forming the mixture into sheets in the same manner as in the manufacture of paper. Gummy or resinous matters may be added to the pulp to cement the fibres together, if necessary.

Claim.—As a new article of manufacture, belting and banding for driving machinery, prepared and possessing the qualities substantially as herein set forth.

No. 53,096.—THEODORE ASCHERFELD, Elkton, Md.—*Mail Lock.*—March 13, 1866; antedated February 28, 1866.—This invention consists in the construction of the case of a mail lock, externally of a rectangular form, with a continuous longitudinal groove into its sides and ends, in which to paste the strip of paper upon which the address is written, and in a cover which fits over and protects the case from injury to its surface.

Claim.—First, the construction of the lock case, as described, with a bead or projection affording protection to a strip which is wrapped around it, for the purpose described.

Second, the groove around the lock case, in combination with the securing pins, or their substantial equivalents, for retaining the strip in position.

Third, the cover N, in combination with the said lock case, as and for the purpose described.

No. 53,097.—JOHN B. ATWATER, Chicago, Ill.—*Air Engine.*—March 13, 1866.—This invention consists in the means employed for injecting air at the usual pressure of the atmosphere into a rarefier, when it is heated and expanded preparatory to its being used in the engine. To accomplish this result a steam generator is provided, in which steam at a low pressure is generated and conducted through a pipe to a chambered cylinder, which works between two disks, which have apertures for the passago of air to the chamber in the cylinder, which chamber receives the air and carries it forward until the chamber registers with the pipe from the generator, and to the rarefier when the volume of air is carried to the rarefier, from thence to the engine.

Claim.—First, working engines by the combined action of steam and air, by means substantially as described.

Second, the employment of steam acting directly upon atmospheric air for the purpose of compressing the air into a rarefying chamber, which communicates with the valve chest of an engine, through means substantially as described.

Third, heating and expanding air and communicating to it certain quantities of moisture by means of steam acting directly upon the air, and then further rarefying the air thus heated for the purpose of employing it as a motive agent, through means substantially as herein described.

Fourth, the combination of a chambered cylinder D, with the ported plates E E′ and a steam generator, said cylinder operating substantially as described.

Fifth, the combination of air-supplying chambers, constructed and operating substantially as described, with a rarefying chamber C, or its equivalent, and a steam generator, substantially as described.

Sixth, arranging the air-rarefying chamber C in such relation to the steam generator that the same fire will heat both, substantially as described.

Seventh, the arrangement, substantially as herein described, whereby either rotary or oscillatory motion is communicated to the chambered air supplier D from the engine, in such manner that the relative motions of the said supplier D and of the engine will be such that the periods of opening and closing of the valves of the engine will correspond with the opening and closing of the cavities of the air supplier D, substantially as described.

No. 53,098.—Selden A. Bailey, Waterford, Mass.—*Clothes Wringer.*—March 13, 1866.—This invention consists in constructing the rollers with alternate layers of vulcanized India-rubber and perforated cloth, to give hardness and durability.

Claim.—First, rollers for wringing machines, constructed of alternate layers of India-rubber and perforated cloth, substantially as herein specified.

Second, in combination with a wringing machine, the bench H, constructed substantially as and for the purposes set forth.

No. 53,099.—Selden A. Bailey, Waterford, Mass.—*Bench for Clothes Wringers.*—March 13, 1866.—This invention consists of a bench which about at its middle is provided with two upright standards, in which standards are slots, in which slots is a cross-bar, the whole forming an article of manufacture.

Claim.—A bench for wringing machines, constructed and operating as herein specified, as a new article of manufacture, consisting of the bench A, standards *a a*, and cross-bar B.

No. 53,100.—Wm. J. M. Batchelder, Dayton, Ohio, and Celestin Leiber, Harrisburg, Penn.—*Plough.*—March 13, 1866.—This invention consists in the construction of a device attached to a plough for the purpose of removing the grass, stubble, or other material which impedes the operation of ploughing.

Claim.—First, the clog-piece *a* and slide *d*, constructed and operating substantially as described, when connected to a plough beam, for the purpose specified.

Second, the combination of the clog-piece *a*, slide *d*, lever *g*, bar *h*, and lever *i*, constructed and arranged substantially as described and for the purposes set forth.

No. 53,101.—S. R. Beckwith, Cleveland, Ohio.—*Granaries, Fruit Houses, &c.*—March 13, 1866.—The object of this invention is to arrest the action of decomposing agencies by providing means for conveying away the obnoxious gases and vapors.

Claim.—First, making the room or rooms for preserving grain, fruits, meats, &c., capable of being rendered air-tight by means of a water joint, and ventilating said room or rooms by opening said joint, substantially as and for the purposes set forth.

Second, the combination of an ice floor with a gutter or troughs, so as to form an open or tight joint, in the manner and for the purposes substantially as described.

Third, the pipes C′ and D′, in combination with the cock E, gutters B, and an ice floor, substantially as and for the purposes herein specified.

Fourth, preserving grain, joints, vegetables, &c., in a building whose upper floors are constructed as set forth for receiving ice, with the room or rooms below said floors capable of being made air-tight, and ventilated into and above said floors, in the manner and for the purposes described.

No. 53,102.—H. Bendix and J. H. Fleisch, New York, N. Y., assignors to H. Bendix.—*Neck-tie.*—March 13, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—The combination and arrangement of the hook *a* and elastic band *b*, which serves to retain the hook and is attached to the supporting plate by an eyelet, rivet, clasp, or other fastening, as and for the purpose described.

No. 53,103.—Jacob H. Beidler and A. R. Crihfield, Lincoln, Ill.—*Kerosene Lamp.*—March 13, 1866.—This invention consists in making the tube rising from a small lamp which is used as an air and heat generator at the base of wood instead of metal, as a better non-conductor.

Claim.—First, in a lamp constructed and operated on the principles above described, making the conducting pipe from the heat generator to the illuminating burner of a non-conducting or slow-conducting material, as described.

Second, the combination of the conducting pipe B, made of wood or some other non-conductor or slow conductor of heat, the heat generator J, the perforated plate *v v*, the deflector F, and the illuminating burner, all constructed, arranged, and operating substantially as and for the purpose described.

No. 53,104.—JOHN F. BENNETT, Pittsburg, Penn.—*Mode of Raising Heat by the Combustion of Fuel of various kinds.*—March 13, 1866.—This invention consists in providing the ordinary blast furnace with three series of tuyeres at different heights. The oxygen of the air, combining with the fuel in the lower part of the furnace, unites with the carbon, forming carbonic acid, which in passing up through the heated fuel loses part of its oxygen, and is converted into carbonic oxide. The carbonic oxide is met by the air from the second series of tuyeres, and again converted into carbonic acid, which passing up through the iron ore loses a portion of its oxygen, and is again converted into carbonic oxide, which passes up to the third series of tuyeres, where it is converted into carbonic acid by uniting with the oxygen of the air, passing through said tuyeres.

Claim.—The mode herein described of producing any required degree of heat for the reducing of metallic oxides, or for other purposes in the arts where high temperatures are required, by introducing two or more blasts of oxygen or atmospheric air, either hot or cold, at such different points in the furnace as that a fresh supply of oxygen shall be introduced at or a little beyond or above the point at which the gaseous deutoxide (or acid gas) produced by the first supply of oxygen has been reduced to the gaseous protoxide, (or oxide gas,) by the chemical combination of one atom of the oxygen of the gaseous deutoxide with the element used as fuel, and thus, by a series or succession of combustions, continually adding to the heat produced by the first combustion, substantially in the manner and for the purposes hereinbefore described.

No. 53,105.—JOHN BLACKIE, New York, N. Y.—*Machine for making Plug Tobacco.*—March 13, 1866.—This invention consists of a peculiarly constructed endless belt trough, with which is combined an adjustable roller and scraper, adjusted by combined set-screws.

Claim.—First, the endless belt trough E, constructed and operating as and for the purpose as set forth.

Second, in combination with the trough E, made as described, the roller D, arranged to operate as set forth.

Third, the scraper O, arranged to move concentrically with the surface of the roller D, substantially as shown and described.

Fourth, the combination and arrangement of the adjustable roller D, the screw *e*, and wheels G, with the scraper O, and trough E, as and for the purpose herein set forth.

No. 53,106.—VIRGIL W. BLANCHARD, Bridport, Vermont.—*Car Brake.*—March 13, 1866.—This invention consists in combining with shoes that act upon the periphery of car wheels, shoes acting upon the upper surfaces of the rails, the latter shoes being moved by power produced by the application of the shoes, which act against the wheels.

Claim.—First, the employment or use of pivoted shoes D, connected to rising and falling bars E, substantially as and for the purpose set forth.

Second, the levers F M, connected with the shoe bars E H, for the purpose of transmitting power from the shoes D to the shoes K, substantially as described.

Third, the suspending of the shoe bar H from springs attached to the truck frame, substantially as and for the purpose described.

Fourth, the slotted links N, applied to the levers M, and pedestals G, substantially as and for the purpose set forth.

Fifth, the use of the pivoted rubbers D, bearing against the wheels B, in combination with the levers F M, links N, and shoes K, all being arranged in such a manner that if the wheels revolve in either direction the force or power that results from the contact of the rubber and wheels will be applied to the shoes over the rails, substantially as described.

No. 53,107.—LEANDER W. BOYNTON, Hartford, Conn.—*Machine for making Skewers.*—March 13, 1866.—This invention consists of a machine with a grooved endless floor feeder, and having a revolving grooved feed roller and cutters, which are shaped to cut the shape of the skewer.

Claim.—The combination of the endless chain feeder with the cutter shaft and its cutters, and the grooved bar or grooved roller, when they are constructed, arranged, and operated substantially as herein described and set forth.

No. 53,108.—LEANDER W. BOYNTON, Hartford, Conn.—*Machine for Pointing Skewers.*—March 13, 1866.—This invention consists in providing a machine to point, cut to a length, and count the skewers after they have been made round, which is done by feeding the sticks, which are of double the length as when finished, from a hopper into a grooved cylinder, which presents them to a revolving cutter that points each stick, and cuts in two at the centre, and at the same time is cut to a length by two revolving saws, on the same shaft with the cutter.

Claim.—The cutters *k* and *k'*, Figs. 3 or 4, in combination with the concave bed-piece D, cap-piece G G, and cylinders *l l*, when they are constructed, combined, and operated substantially as herein described and set forth.

No. 53,109.—CARL BURCHARDT, New York, N. Y.—*Nozzle for Fire Engines.*—March 13, 1866.—This invention consists in inserting a thin plate at the outer end of the nozzle in which there is an opening in the centre of diminished size, and which is also depressed around the opening, the edge of the opening being made sharp. Beneath this plate is a chamber, much larger in size than the opening or outlet, which is claimed to avoid friction. In such chamber is a valve or cock for vent, and also a cut-off valve, by which the stream is shut off or let on.

Claim.—First, the application of a thin plate *b* in the nozzle of a fire engine, said thin plate being provided with a discharge opening C, substantially in the manner and for the purpose described.

Second, the chamber *a*, between the opening leading from the hose to the nozzle and the discharge opening C, in the thin plate *b*, substantially as and for the purpose set forth.

Third, the vent *d*, in combination with the nozzle N, constructed and operating substantially as and for the purpose specified.

Fourth, the slide *e*, or its mechanical equivalent, applied in combination with the discharge opening of the nozzle of a fire engine, substantially as and for the purpose set forth.

No. 53,110.—J. M. CANFIELD, H. E. COLEMAN, and E. P. WHEELER, Lawrence, Kansas.—*Reaping and Mowing Machine.*—March 13, 1866.—This invention consists in an arrangement of means for imparting motion to the sickle, and for throwing the same into and out of gear.

Claim.—First, the combination and arrangement of the lever F, provided with its movable fulcrum *b*, the fingers G G, the drive wheel A, with its cams *a*, and the pitman rod N, arranged and operating as and for the purposes specified.

Second, the combination and arrangement of the lever F, bolt *b*, arm I, rod J, and lever K, arranged and operating as and for the purposes herein set forth and shown.

No. 53,111.—EDWARD S. CARTER, Keokuk, Iowa.—*Boot Blacking Case.*—March 13, 1866.—This invention consists of a case containing a box of blacking and blacking and polishing brushes, and constructed so that the brushes may be affixed to the outside of the case, and thus the latter made to subserve the purpose of a handle to the brushes.

Claim.—The combination of the case A, and the brushes B B, and brush-fastening E, substantially as described.

No. 53,112.—JOHN CATT, Bourbon, Ind.—*Washing Machine.*—March 13, 1866.—This invention consists of a swinging washer upon a rod that is attached to two inclined spring supporters which are secured to the sides of the washing box in such manner as to allow the ends of the springs to be turned up and over toward the rear end of the machine, so as to carry the swinging washer out of the way when it is desired to rinse the clothes or cleanse the box. An eccentric is placed under each spring, near the point where it is secured to the box, for the purpose of adjusting the swinging washer the required distance from the rollers, so that light and heavy fabrics may be washed with equal facility.

Claim.—The arrangement and combination of the springs E, eccentric B, with the friction rollers P, swinging washer I, and rod J, as set forth for the purpose specified.

No. 53,113.—AARON CHAMBERS, North Providence, R. I.—*Machine for Cutting Files.*—March 13, 1866.—This invention is designed as an improvement on the machine described in the patent granted to E. Bernot, July 24, 1860, and consists, first, in giving to the bed a tipping motion while the file is being cut by means of a windlass and strap, in order that the cuts may all have the same inclination to the curved surface of the blank; and, second, in giving to the bed a transverse rocking motion by means of a wedge-shaped pattern fixed upon the surface of the semi-cylindrical bed near its edge, and a fixed stop under which the pattern is forced as the bed is gradually moved along, for the purpose of bringing the lateral margin of the half-round blank up within the reach of the cutter.

Claim.—Giving to the rocking bed a gradual tipping movement during the operation of cutting the file, substantially in the manner and for the purpose described.

Also, rolling and controlling the rolling or oscillating movement of the bed by means of a pattern and other suitable appliances, substantially in the manner and for the purpose specified.

No. 53,114.—W. C. CHOATE, Washington, D. C.—*Letter and Paper File.*—March 13, 1866.—This invention consists of a file band, of brass or other metal, made in two parts of a square, to the lower part of which is attached an arched spring hook on each side, and to the upper part a flanged piece of metal, in which are notches, holes, or grooves, so formed as to receive and retain the said spring hook.

Claim.—An improved file band, formed in two parts or sections of a square having hooks or catches, notches or holes, as herein described.

No. 53,115.—JOHN CLARK, Philadelphia, Penn.—*Altiscope.*—March 13, 1866.—This invention consists of an arrangement of lenses and mirrors in a telescopic tube, by means of which a person is able to overlook objects intervening between him and the view he desires to see.

Claim.—Combining with a telescopic column of tubes an arrangement of mirrors and lenses, such as is herein described, with provisions for adjusting these parts to any elevation of the tubes desired, in the manner and for the purposes herein set forth.

No. 53,116.—THOMAS COGSWELL, Boston, Mass.—*Extension Holding Strap for Street Railway Cars.*—March 13, 1866.—This invention consists of a holding strap, to be used by persons who are obliged to stand up in street cars. The strap is attached to a spring and ratchet wheel, the latter being confined within a suitable case and attached to the rods which usually run the length of the car, and attached to the roof. The straps can be pulled out a considerable distance so that two or more persons can take hold of the same, and be supported thereby.

Claim.—First, in combination with bar I, or its equivalent, an extension holding strap, substantially as and for the purpose described.

Second, in the construction of such a strap the use of the spiral spring E, or its equivalent, in combination with the spirally coiled strap F, both being coiled upon a sleeve D, or its equivalent, and acting in opposition to each other, the whole being combined with and riding on bar I, either loosely slipping or securely fastened, substantially as described.

No. 53,117.—ROBERT CORNELIUS. Philadelphia, Penn.—*Pump for Deep Wells.*—March 13, 1866.—In this invention, at any desired point in the pump cylinder, slots are made to allow the gas to escape into an auxiliary chamber surrounding this part of the pump cylinder, whence it ascends around and above the piston preceding the liquid.

Claim.—The supplemental annular chamber at one or both ends of the stroke so as to form a circumferential passage for the escape of the gas between the circumference of the pump cylinder and the enlarged chamber, substantially as described.

No. 53,118.—ISAAC E. CRAIG, Cleveland, Ohio.—*Steam Generator for Heating Purposes.*—March 13, 1866.—In this invention upon rectangular iron frames extending round the top, sides, and bottom, metal plates fit, and between them is the water space. Alternately with these spaces are flues formed by vertical metal plates, with several horizontal ribs, which serve to support the plates of the water space. Clamps and screw bolts secure the whole firmly.

Claim.—First, the flue plates D forming a system of supports and flues *f* when arranged between the water chambers B B′, substantially as and for the purpose set forth.

Second, one or more water chambers B B′ when constructed and arranged in relation to each other and flue stay plates D, as and for the purpose set forth.

Third, the construction of the frame B″, in combination with the side plates C, when arranged in the manner and for the purpose set forth.

No. 53,119.—HUGH H. CRAGIE, New York, N. Y.—*Water Closet.*—March 13, 1866.—This invention consists in a movable pipe attached to an ordinary water closet so that it may be turned to direct the water upwards upon the person, and when not so used may be turned aside, and the water closet used in the ordinary manner.

Claim.—A movable pipe for directing a jet or jets of water upward, as arranged in relation to a water closet, substantially as and for the purposes specified.

No. 53,120.—JOSEPH CROOKES, St. Louis, Mo.—*Saw-grinding Machine.*—March 13, 1866.—This invention consists in the employment of an oscillating bed, in connection with an adjustable grindstone, arranged in such a manner that the work may be done very expeditiously.

Claim.—The oscillating bed B, in combination with the adjustable grindstone P, arranged and operated by means substantially as and for the purpose herein set forth.

Also, the crank pulley E and friction pulley H, in connection with the rod G and the band *k*, passing over the pulleys J L on the shafts I M, all arranged substantially as shown and described, for operating the bed and grindstone from one and the same driving shaft I.

No. 53,121.—STEPHEN H. CROSSMAN, Battle Creek, Mich.—*Bed Bottom.*—March 13, 1866.—This invention consists of two sets of elastic slats, with blocks between them at their ends, and secured together by cords running through holes in the slats and blocks, and all resting on the bedstead and two longitudinal central bars.

Claim.—The spring slats as arranged and combined with the end supports and cords, as herein described and for the purposes set forth.

No. 53,122.—E. S. DAWSON, Syracuse, N. Y.—*Snap Hook.*—March 13, 1866.—This invention consists in providing the tongue of a snap hook with prongs at its inner end to catch over a bar, which is cast or otherwise fastened in the body of a hook, so that by placing the

prongs of the tongue over the bar and closing them, said tongue is firmly connected to the body of the hook.

Claim.—The arrangement of the bar *c*, recess and groove in the body of the snap with the prongs *d*, and spring on the tongue affording the means for the attachment of the tongue to the body, and also for guiding and protecting the spring, substantially as described.

No. 53,123.—JOHN DAVIS, 2d, Lake Village, N. H.—*Churn.*—March 13, 1866.—This invention consists in the construction of the dasher, being formed of half tubes, with their concave sides set opposite to each other in a vertical position upon a radial tube of the same construction, whereby air is continually drawn down in the tube and distributed all through the cream.

Claim.—The open vertical and radial dasher half tubes *g g* and *h h*, arranged and operating substantially as and for the purpose herein specified.

No. 53,124.—GEORGE W. DAY, Charlestown, Mass.—*Manufacture of Pegs for Shoes.*—March 13, 1866.—This invention consists in saturating pegs made of rubber, &c., with glue, to give them the required rigidity for driving when dried, after which it is cut into pegs of the required length.

Claim.—An artificially rigidified stitch-forming material, substantially as described.

No. 53,125.—WILLIAM DICKERSON and H. O. WILBUR, Ridgeberry, Penn.—*Stump Extractor.*—March 13, 1866.—This invention is explained by reference to the claims and engraving.

Claim.—First, the combination of the levers A A and A′ A′, substantially as described, whereby the operation of pulling the stump is commenced and continued to a certain extent by the one pair A, and then transferred to and completed by the other pair A′, as and for the purpose explained.

Second, the combination of the two pairs of levers A A A′ A′, the prop or supports H H, draught rope D, links G G, and the attaching devices C E F, the whole being constructed and arranged to operate substantially as described.

No. 53,126.—KNOWIS W. DOUDNA, Milwood Township, Ohio.—*Broom-corn and Sorghum Strippers.*—March 13, 1866.—This invention consists in so dividing a flat piece of wood that the dividing lines starting from opposite ends and passing each other to a sufficient distance will secure the approach of the jaws in nearly a parallel position.

Claim.—The application to the operation of removing the seeds from broom-corn and sorghum cane of the spring or principle of motion produced by dividing a flattened piece of wood so that the dividing lines, starting from opposite ends, shall pass each other for such length and at such a distance apart as will secure the approach of the jaws of machine or clamp in a parallel or nearly parallel position, when a stalk or stalks of broom-corn or sorghum cane is placed between (in a horizontal position) the clamps or jaws of the machine.

No. 53,127.—L. DUVALL, Big Spring, Ky.—*Combined Spade and Fork.*—March 13, 1866.—This invention consists in forming the blade of a spade of two series of tines, placed one over the other, the upper series being hinged at the top of the blade, and operated by the laborer through a rod which extends up to the handle; the implement being so made in other respects as to combine the qualities of a dung fork also. The object of the invention is to lessen labor in spading the ground.

Claim.—The arrangement of the tines permanently attached to a suitable handle and the removable and vibratory tines hinged thereto and operated by the arm *g* and rod *f*, or their equivalents, substantially as and for the purpose described.

No. 53,128.—S. H. EARLY, Lynchburg, Va.—*Pump for Deep Wells.*—March 13, 1866.—The pump tube is closed at the bottom, the oil flowing into it through lateral holes, a tube descending to a foot-valve below the level of these holes. The gas ascends between the pump tube and walls of the well to a point near the surface, where a tube having an external packing at its lower end serves to prevent the descent of the water.

Claim.—The combination with and arrangement of a pump tube having the interior tube G and the openings *h* in relation to each other and to the valves of the tube A and packing D, all substantially as and for the purpose described.

No. 53,129.—CHARLES R. EDWARDS, Niagara City, N. Y.—*Coffee Mill.*—March 13, 1866.—This invention consists in the construction of the parts and connecting them, by casting together the crank handle and driving gear; also, in so constructing the grinding parts that they can be taken from the mill case and returned without separating them.

Claim.—First, the face piece *k* and regulating bar *t* and hooks *o o*, arranged and constructed substantially in the manner and for the purposes set forth.

Second, the guarding of the grinding surfaces from too close contact with each other, substantially as and for the purpose set forth.

Third, so combining the cog wheel *y* and regulating bar *t* with the face piece *k* that,

for the purpose of cleaning the mill, these parts may be removed together and replaced in the mill without becoming separated.

Fourth, the axle *r*, cog wheel *p*, nut *x*, and handle S, in combination, when constructed and arranged specifically as and for the purposes set forth.

No. 53,130.—EDWARD C. EVANS, Cabinet, Penn.—*Weather Strip.*—March 13, 1866.—This invention consists in having a duplicate threshold, or sill, provided with projections at the front and rear, the latter fitting into the recess in the threshold beneath the door, and the former, when raised by a cam button, covering up the point between the door and threshold.

Claim.—The movable sill or weather strip D, provided with the rabbets *a* and *b*, in combination with the strips C′ on the permanent sill C, or with a permanent sill having a rabbet *d*, substantially as specified.

No. 53,131.—FRANCIS L. FAULKNER, Derby, Conn.—*Spittoon.*—March 13, 1866.—Thie invention is designed for use in railroad cars, and to be inserted in the floor so as to bs nearly level therewith, and consists in such a construction that the bowl may be cleared or cleaned without being removed from the recess in the floor.

Claim.—The combination of the grate C with the plate F, constructed and arranged so that by turning the grate C the bowl may be opened or closed, substantially as and for the purpose specified.

No. 53,132.—HENRY FISHER and MILTON BALL, Canton, Ohio.—*Washing and Wringing Machine.*—March 13, 1866.—In this machine one shaft of the rubber rollers is provided at one end with a crank and at the other with a balance wheel. The balance wheel is connected, by means of a pin, with a pitman which passes down into the tub. At the bottom of the pitman is secured a beater, to which the clothes may be secured, and thus raised and lowered as the pitman rises and falls. The beater may be arranged only to pound the clothes. The washing machine is provided with a wringer, which is operated by the same crank that actuates the washer.

Claim.—First, connecting the pitman F with one of the wringing roller-shafts, substantially as and for the purpose herein specified.

Second, connecting the wringing frame H to the tub A in an adjustable manner, by means of the shaft I, annular plate *c*, dog *e*, and bracket K, constructed and used as and for the purpose herein specified.

Third, constructing the tub A in the manner described, with the bottom B, opening C, plate D, and chamber or space E, when used as and for the purpose herein fully set forth.

No. 53,133.—TIMOTHY B. FITCH, Norwalk, Conn.—*Sand-paper Holder.*—March 13, 1866.—This invention consists in hinging the block around which the sand-paper is placed, and held by sharp points, to a holder, and when brought together a spring clutch operates to hold the two points firmly, with the paper between them and around the lower face of the lower block.

Claim.—A sand-paper holder, constructed and arranged in the manner substantially as herein set forth and described.

No. 53,134.—P. TENNEY GATES, Plattsburg, N. Y.—*Wristband.*—March 13, 1866.—This invention is explained by the claims and engraving.

Claim.—First, a reversible wristband unattached to any other garment, constructed substantially as described and for the purpose set forth.

Second, a wristband, pendent from an attachment on the arm, substantially as and for the purposes described.

No. 53,135.—JOSEPH GECMEN, Chicago, Ill.—*Apparatus for Sprouting Malt.*—March 13, 1866.—This invention consists of a cylindrical vessel, upon the top of which is placed a vessel with a conical bottom, the sides and bottom of said vessel being perforated. Within the vessel is a vessel with a conical bottom and top, the bottom and sides of this vessel being also perforated. The vessel's band is provided with outlets. A rotary stirrer passes up through the bottom into the vessel. The malt is carried up from the box into the hopper by means of buckets. Steam is admitted into the water contained in the vessel through a pipe, and keeps the air within said vessel constantly charged with moisture.

Claim.—First, the combination and arrangement of the chamber A, the perforated vessel B, and the perforated air chamber D, substantially as and for the purpose specified.

Second, in combination with the vessel B and discharge pipe C, the employment of a stirrer E, arranged and operating substantially as and for the purposes set forth.

Third, providing the air chamber D, when arranged within the vessel B, with the conical top E, as and for the purposes described.

Fourth, the employment of a water chamber A, in combination with the air chamber D, pipe I, and receiving vessel B, arranged as specified and for the purpose set forth.

No. 53,136.—WILLIAM F. GOODWIN, Washington, D. C.—*Harvester Rake.*—March 13, 1866.—This invention consists, in part, of an arm projecting from the rake and attached to

two other upright arms, one of which receives a vibratory motion, which it imparts to the other and to the arm first mentioned, whereby the rake is carried back and forth over the platform. Provision is made for throwing the rake upon its end in an upright position, so as to have it out of contact with the platform in making its returns.

Claim.—First, carrying the rake forth and back over the platform by means of the vibrating arm B, combined with the arms C C′ and cam-wheel F F, the whole being arranged to operate substantially as described.

Second, the combination with the projection a' on the rake-head of the stud i, lever I, roller J′, and wheel H, whereby the rake is thrown upon its end in an upright position, substantially as and for the purpose set forth.

Third, in combination with a rake operating as described, pins or projections a^2 b^1, arranged and operating in the manner and for the purpose explained.

Fourth, the arrangement of the spring O and pin a^3, whereby the rake is retained in an upright position during its ineffective stroke, as described.

No. 53,137.—Wm. F. Goodwin, Washington, D. C.—*Harvesters.*—March 13, 1866.—This invention relates to that class of machines employing the vibrating or shear blade form of cutter, and consists in providing each blade or tooth with a separate, flanged, and journalled seat or case, into or from which the cutter may be readily inserted or withdrawn, and each of which said seats is provided with rear projections, which embrace and are connected with a reciprocating bar, by means of which they are caused to impart a vibratory motion to the cutters.

Claim.—The flanged and journalled seats or casings M, provided with the projections n n', and screw m, constituting receptacles for the teeth or cutters C, and admitting of the independent application and removal of the latter, as described.

No. 53,138.—W. F. Goodwin, Washington, D. C.—*Grain Binder.*—March 13, 1866.—This invention relates to mechanism, attached to and moving with a reaping machine, for binding the grain as fast as it is cut, into sheaves, and discharging the bound sheaves upon the ground. The grain is brought by a rake to one side of the platform, where it is caught by a series of curved vibrating fingers, which carry it up to and compress it against a set of curved stationary fingers, into a compact gavel. The band (of straw) is seized by a series of travelling jaws arranged upon the links of a flexible chain carrier, and is passed around the gavel, when its ends are seized by two pairs of jaws, which rotate about a common axis, twisting or passing the ends of the bands around each other; the ends are then caught by two rotating and reciprocating hooks, which draw the said ends beneath the band from opposite sides, when the ends are released, the compressing arms withdrawn, to receive another gavel, and the bound sheaf is dropped upon the ground.

Claim.—First, the vibrating fingers F, fixed upon the shafts F′ of carrier H, and made to move therewith by means of the springs f, and bars F^2, substantially as and for the purpose herein specified.

Second, in combination with the above, the series of stationary fingers G, and shafts or supporting bars G′, said stationary fingers acting in conjunction with the vibrating fingers F to form and compress the gavel, substantially as described.

Third, the arm H, in combination with the circulating chain or carrier I, and wheel J, said devices acting together in the manner described, for the purpose of placing the band around the gavel.

Fourth, the carrier I, composed of the plates i, rollers i', and claws or fingers i^2, as described.

Fifth, the disks or rollers K, which act on the claws i^2, so as to cause them to open and receive the band when the carrier is in position to take it, substantially as described.

Sixth, constructing the arm H with the flanges h, which afford a bearing for the carrier I as it traverses said arm, substantially as set forth.

Seventh, the wheel J formed with flanges j j', and employed to take up, let out, and guide the carrier I in its movements, substantially as described.

Eighth, the rollers h^3 h^3 in the end of the arm H, which cause the outer claws i^2 i^2 to release the end of the band to be grasped by the turning or crossing devices, as described.

Ninth, the two pairs of jaws m m' m m', adapted to grasp the ends of the band separately, and pass one around the other, so as to interlock them, substantially as described.

Tenth, the hooked rods R′ R′, adapted, after the band has been passed around them, to seize its interlocked ends and draw them beneath the band, substantially as explained.

Eleventh, the combination with the hooked rods R′ R′, of the sleeves S S, grooves or slots s s, and pins r r, for imparting a rotary movement to the hooks, as and for the purpose specified.

Twelfth, the combination with the clutches m m', of the plate L, sleeve L′, rod M, pivoted arm n, link o, and slot l', all arranged to operate substantially as described.

Thirteenth, the combination with the above of the vibrating lever N, connecting rod N′, swinging arm N, and projection t, through which the requisite vertical movement is transmitted from the main axle T to the clutching devices.

Fourteenth, the cradle E, arranged at one side of the platform to receive the grain from

the rake and conduct it to the stationary fingers G, and permit the fingers F to pass under and raise the grain for the purpose of forming the gavel, as described.

Fifteenth, the arrangement of the cam wheel U, bent arm *a*, shaft *b*, toothed segment *b'*, pinion *c*, rack *d*, and pinion *g*, for operating the shafts F' and J'.

Sixteenth, the reciprocating arm e^3, in combination with the projection *e'*, protuberance e^7, and spring e^2, for operating the cradle E.

Seventeenth, the combination of the pinion O, rack P, rod P', oscillating arm Q, elbow or fork P^2, and roller 4, on the cam wheel U, said parts operating to give the requisite rotary movement to the devices which clutch and turn the ends of the band.

Eighteenth, in combination with the hooked rods R R', the vibrating arm R^2, which is operated by the roller 1 on the cam wheel, and connected with the rods R' by the rods R^4 R^4 R^6 R^7, and double-crank shaft R^3.

Nineteenth, the connecting rods R^5, formed with hooked ends 3 3 to permit them to be readily disengaged, as and for the purpose set forth.

Twentieth, the binder frame 9 9 10 10, braced by means of the tubular shafts, as herein described.

No. 53,139.—JOHN G. GOVE, Cleveland, Ohio.—*Coffee-pot.*—March 13, 1866.—In this invention the cover has a water joint; an exterior water chamber has a connecting tube open at top near the cover; inside the vessel is an interior chamber for coffee, with perforated bottom and sides.

Claim.—The arrangement of a coffee-pot, having a water joint cover J, an exterior water chamber C, and tube D, and the interior coffee chamber I, and receptacle E, the several parts being constructed and combined substantially as and for the purposes set forth.

No. 53,140.—WILLIAM GREEN, Cleveland, Ohio.—*Roofing Cement.*—March 13, 1866.—This invention consists of a composition of pulverized Lake Superior iron ore, petroleum, flax-seed oil, shellac, linseed oil, and litharge.

Claim —A roofing cement, composed of the ingredients herein set forth, and prepared and compounded in the manner specified.

No. 53,141.—AMOS HAMLIN, Schoharie, N. Y.—*Churn.*—March 13, 1866.—This invention consists in the combination and arrangement of a lever, provided with a double set of cogs with pinion, bridge tree, and dashers; the said lever is operated back and forth, so as to impart an oscillating motion to the dashers in opposite directions, in such a manner as to churn the cream in a very short time.

Claim.—First, the combination of the handle E with a double set of cogs *d d*, and the two reciprocating shafts B B with segment pinions C C, all constructed and arranged to operate as and for the purpose specified.

Second, the movable bridge D, in combination with the shafts B, dasher C, handle E, and tub A, constructed and operating substantially as and for the purpose described.

No. 53,142.—E. C. HASERICK, Lake Village, N. H.—*Mode of Melting and Aggregating Iron Chips, Turnings, &c.*—March 13, 1866.—This invention consists in mixing iron turnings and shavings with clay and water, to which may be added a small quantity of sulphuric acid. The small particles of iron are held by the clay and kept from burning or blowing out of the blast furnace.

Claim.—Melting iron chips, shavings, or turnings, and other fine particles of iron loosely put in a furnace, and preventing them from being burned and blown away, by mixing them with earth, or clay and water, substantially as described.

No. 53,143.—MOSES HAWKINS, Derby, Conn.—*Shaft Coupling.*—March 13, 1866.—This invention consists of an encircling cylindrical collar for coupling the ends of shafts, in which collar are holes through which, and through depressions in the shaft, pass cross-keys. Longitudinal feathers on the shafts, fitting into grooves in the said collar, are also made use of.

Claim.—The employment, in combination, of one or more feathers formed on (or locked to) the shaft longitudinally, a surrounding collar adapted to embrace the shaft's ends and receive said longitudinal feathers and cross-keys, passing through said collar and depression across slots in the shafts, the whole arranged to operate as specified.

No. 53,144.—M. C. HEPTINSTALL, Enfield, N. C.—*Burglar Alarm.*—March 13, 1866.—In this invention a small gun barrel is enclosed in a box to be screwed to the floor near the door, window, or safe that is to be protected. A small shaft, by a half revolution, raises the hammer; a long rod or lever extending from this shaft has its end held up by an upright. This upright is pulled out by a string connected to the door or window, and the lever being freed the shaft turns, and the hammer falls upon a percussion cap.

Claim.—The arrangement and construction of a gun with a mainspring D, rod I, movable standard J, standard N, and lever O, when arranged, combined, operating, and fired from the inside of the box, as herein described and for the purposes set forth.

No. 53,145.—JOHN GEORGE HIRZEL, Wilmington, Del.—*Drilling Machine.*—March 13, 1866.—This invention consists in attaching to a slide which works in the ways of an ordinary vertical drilling machine beneath the drill shaft, a guide pattern having an oval groove in its under side, into which a spur upon the upper end of the tool works. The tool is secured to a slide which works parallel to the article being bored, in the bottom of a stock fixed into the socket of the drill stock.

Claim.—The combination of the wheels, pinions, slides, ways, plates, springs, screw, and couplings, foot piece with slide, and drill bit with heel, as arranged and described, for drilling oval or round holes, constituting a portable metallic self-acting hand drill.

No. 53,146.—HOBAN J. HOLDEN, Genoa, N. Y.—*Timepiece.*—March 13, 1866.—This invention consists in attaching to the arbor of the hand a wheel having twelve teeth, into which gears a pawl attached to a bent lever, one end of which comes against a cam projection on the arbor of the minute hand. At each rotation of the minute hand the wheel is carried, by means of the pawl and bent lever, one-twelfth round, or the distance of one tooth.

Claim.—The tripper *t*, the lever *e*, the catch *i*, and wheel *c*, in combination, when used as a differential gear.

No. 53,147.—GEORGE A. HOWE, Brooklyn, N. Y.—*Cotton Picker.*—March 13, 1866.—This invention consists in the combination of a toothed wheel working into the links of an endless chain, in the construction of which chain there are formed teeth, which strip the cotton from the bolls, and carry it to the other end of the machine, where it is thrown off into a receptacle by a revolving stripper constructed in a novel manner, all of which is moved by a hand crank.

Claim.—First, the wheel C, acting directly upon the endless chain, to rotate it, substantially as described.

Second, rotating the stripper D, by means of the endless chain passing around and acting directly upon its axis, substantially as described.

Third, the guards F F, in combination with the endless toothed chain, constructed, arranged, and operating substantially as and for the purpose described.

No. 53,148.—FENTON HUMPHREY, Philadelphia, Penn.—*Coffee Roaster.*—March 13, 1866.—This invention consists of a semi-spherical vessel having a removable cover, in which is an aperture for observing the progress of roasting, and depending ears, one on each side, in which an agitating device is hung, the handle protruding through an oblong slot near the top.

Claim.—A semi-spherical vessel for roasting coffee and other grains, with the cover *d*, having a slot *e*, aperture *f*, and depending ears *h h*, in combination with the agitating device *a b c*, substantially as and for the purposes set forth.

No. 53,149.—J. HENRY JENNINGS, New Bedford, Mass.—*Fly and Mosquito Bar.*—March 13, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—A portable hinged and fold-up fly and mosquito bar, guard, or net, composed of the bows, bars, hinges and fastenings, constructed substantially as and for the purpose herein set forth and described.

No. 53,150.—J. HENRY JENNINGS, New Bedford, Mass.—*Mode of Securing Tips to Boots and Shoes.*—March 13, 1866.—This invention consists in securing tips to the toes of shoes, by a cord or wire laced through its edges, and nails, or their equivalents, driven into the sole at each side, to which the cords may be fastened.

Claim.—Securing tips to the toes of shoes, substantially as herein described and represented, viz: by a cord or wire laced through its edges, and nails, or their equivalents, as herein set forth and described, for fastening the cord or wire.

No. 53,151.—JOSEE JOHNSON, New York, N. Y.—*Fruit Jar.*—March 13, 1866.—This invention consists of a jar having two rectangular slots in the neck. The top fits in an annular shoulder in the neck of the jar. The cover is secured to the jar, by means of the cross-bar, which fits in the rectangular slots, and has a screw through its centre.

Claim.—First, sinking the confining screw within and below the mouth of a self-sealing can, substantially as and for the purpose herein set forth.

Second, the employment of one or more apertures in the side, arranged as represented, relatively to the surface on which the cover rests, to allow the loosening of the cover, substantially in the manner and for the purpose herein set forth.

Third, the construction and arrangement of the openings B B, in opposite sides of the neck of the can, and so arranged as to perform the double function of receiving and confining the ends of the cross-bar when the cover is held down, and admitting of the action of the same or a different bar to overcome the adhesion of the cover in removing it, substantially in the manner and for the purpose herein set forth.

No. 53,152.—HENRY L. JONES and DUNCAN S. FARQUHARSON, Rochester, N. Y.—*Apparatus for Bleaching Paper Pulp.*—March 13, 1866.—This invention consists of a vessel

supported in bearings upon a frame and connected by a pipe with another vessel. The bleaching liquor is forced into the vessel containing the material to be bleached by a pump, or it may be allowed to flow into the said vessel from an elevated tank.

Claim.—First, bleaching the materials to be converted into paper by subjecting the same to the action of bleaching liquor applied under pressure, substantially as described.

Second, the combination with the cylinder A, of the pump D, and pipe B, substantially as and for the purpose set forth.

Third, the combination with the cylinder A, of the elevated reservoir E, and pipe F, substantially as and for the purposes set forth.

Fourth, in combination with the cylinder A, pump D, and pipe B, the valve O, for relieving the pressure of the liquid, as explained.

No. 53,153.—J. E. KENDEIGH, Amherst, Ohio.—*Fence.*—March 13, 1866.—This invention consists of a fence post so constructed as to be adapted to all the ordinary fence work, being made of one entire piece and so formed as to resist all transverse strains.

Claim.—First, the grooves F and flange D, in combination with the post and bottom board, arranged as and for the purpose set forth.

Second, the rib B and flange D D′, in combination with the base *c′* and body of the post, as and for the purpose described.

No. 53,154.—NATHANIEL LEONARD and NATHANIEL N. LEONARD, North Dighton, Mass.—*Tack and Nail Machine.*—March 13, 1866.—In this machine a device is applied to the ordinary nail-cutting machines to grip the point and support the head of the tack or nail, after it has been cut, and hold it until the gripers come into action to hold it while being headed. A bevelled notch is cut in the lower side of the end of the stationary cutter, so that the discharger may pass between the point of the nail and the cutter, for the purpose of ejecting it when finished.

Claim.—First, the combination of the tack retainer G and its operative mechanism with the mechanism for making the tack; that is, for severing it from the strip of metal, and for holding it and heading it, the whole being substantially as described.

Second, the combination of the bevel *g*, and the discharger I, and its operative mechanism as described, with mechanism for making the tack as explained.

No. 53,155.—JOHN L. LEWIS, Pittsburg, Penn.—*Making Axes.*—March 13, 1866.—This invention consists in a method of manufacturing axes, which comprises the rolling of iron bars into such shapes that a cross section of one of the bars represents the half of an axe, without the steel, split longitudinally through the eye.

Claim.—First, forming the blanks for axes of two pieces by rolling the bars from which said pieces are cut with a groove therein for the handle, and of such a shape that when two of the pieces are put together a cross section thereof will represent an axe without the steel, considered as split longitudinally through the eye.

Second, rolling said bars with a bevel edge, so that when the blanks are put together they will form a notch for the reception of the steel.

Third, forming on said bars the projection T and corresponding channel S, for the purpose of holding the blanks in place during the operation of welding.

No. 53,156.—W. H. LINEBACK, Greenfield, Ind.—*Corn Planter Cultivator.*—March 13, 1866.—This invention consists in connecting the seed slide of a corn planter to a cross arm of the plough handles by means of a spring and wire connection, the slide being operated upon through the medium of said spring.

Claim.—The spring K when arranged and applied to the seed slide J, and used in connection with the shaft L, provided with handles, and also connected with the seed slide J, substantially as described.

No. 53,157.—JOHN LIPPINCOTT, Ptttsburg, Penn.—*Saw.*—March 13, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—The use in cross-cut saws of a slot or indentation having parallel sides, and extending into the blade below the root or termination of the inclined side of the teeth, for the purpose of serving as a guide in dressing the saw with a file, so as to preserve the original shape and relative distance apart of the saw-teeth, and enable it to be kept in order without gumming.

No. 53,158.—THOMAS R. LOVETT, Mount Airy, Penn.—*Fan Attachment for Sewing Machines.*—March 13, 1866.—This invention consists in a mechanism for transmitting motion from the shaft of the driving wheel of the machine to the fan, in order to effect an agitation of the air around the operator, so as to keep him cool, suitable machinery being employed for throwing the parts in and out of gear.

Claim.—First, operating a fan attachment to a sewing machine by the driving shaft of the machine, through the medium of a belt F passing over pulleys *c c′ c″*, and the shaft C′ of the machine, substantially as described.

Second, the guide *f* and wedge-slide *g* for throwing the belt F into or out of operation, in combination with the standard D and shaft C′, substantially as specified.

No. 53,159.—ABRAHAM MALLETT, Erie, Penn.—*Mode of Treating Potatoes to Prevent Potato Rot.*—March 13, 1866.—This invention consists in cutting the seed potatoes into slices, which are to be covered with salt for about thirty minutes, after which they are planted in raised hills or ridges. When the plant is in full blossom a hole is made in each hill by running a pointed stick through the hill down to the subsoil.

Claim.—The mode of preparing the seed potatoes by extracting the juice by salt, and ventilating the hills as set forth.

No. 53,160.—DAVID F. MASNATA, New York, N. Y.—*Rotary Steamship.*—March 13, 1866.—This invention has for its object the production of a steamship in which great velocity shall be combined with entire safety. What the invention consists in is set forth in brief in the claim.

Claim.—An improved recto-rotary or revolving steamship, formed by combining an interior stationary cylinder E, and an exterior surrounding gallery K, with the shaft A, and exterior revolving cylinder B, provided on its exterior surface with alternate paddles and air-tight compartments, the whole being constructed and combined as herein described and for the purposes set forth.

No. 53,161.—THOMAS MCAULEY, San Francisco, and M. L. CHENEY, Illinoistown, Cal.—*Covering for Hose.*—March 13, 1866.—This invention is explained by the claim.

Claim.—Forming a hose covering by winding rope or cord spirally around a cylinder or former, and having for its support warps or strands of rope or cord passing around each spiral strand by means of a half twist, substantially as and for the purpose herein specified and set forth.

No. 53,162.—JOHN MCVAY, Columbia, Ohio.—*Roofing.*—March 13, 1866.—This invention relates to the class of roofs which consist of a series of boards, whose joints or interstices are closed by metallic tongues or strips, which serve also to conduct off whatever water may enter the interstices.

Claim.—The combination of the V-shaped troughs E, with grooves C and kerfs D, in the edges of the boards B, all constructed and arranged in the manner and for the purposes set forth.

No. 53,163.—JOSEPH L. MEEK, New York, N. Y.—*Instrument for Parting Ladies' Hair.*—March 13, 1866.—In this invention a band of metal passes over the head from ear to ear. From the centre of this band two bands pass towards the forehead, there being space enough between them to pass a comb to make the part.

Claim.—An instrument to facilitate the parting of ladies' hair, consisting of a yoke A and a guide B B, substantially as herein described.

No. 53,164.—CHARLES MELONE, Lawrence, Kansas.—*Animal Trap.*—March 13, 1866.—In this invention the bait is suspended in a small cage or receptacle, the approach to which is by inclined planes of increasing declivity; and immediately beneath the bait is a tilting platform, just counterpoised, so that the animal on treading on this is precipitated into the box of the trap.

Claim.—First, the combination and arrangement of the inclined planes E F, and the movable trap H, operating as and for the purposes set forth.

Second, the combination of the lever G, trap H, weight I, and spring J, when arranged with respect to the inclines E F, substantially as specified and shown.

No. 53,165.—ANTONIO MEUCCI, Clifton, N. Y.—*Process for Making Paper Pulp from Wood.*—March 13, 1866.—This invention consists in subjecting wood to the action of a mixture of nitric and muriatic acids for a proper length of time, after which it is washed and drained, and boiled in a strong solution of caustic alkali. The wood thus treated may be pulped and bleached in any known manner.

Claim.—The process of treating vegetable material with dilute nitric and muriatic acids, and then subjecting it to the action of an alkali, substantially as set forth.

No. 53,166.—THOMAS D. MILLER, Kankakee, Ill.—*Pencil Pocket.*—March 13, 1866.—This invention consists in a pocket, narrowing toward the middle, which is grasped by an elastic band by which the pencil is held, and thus prevented from resting on its point.

Claim.—A pocket flaring toward the mouth, and having an elastic band applied thereto, substantially as and for the purpose herein shown and described.

No. 53,167.—ADOLPH MILLOCHAU, New York, N. Y.—*Distillation of Petroleum.*—March 13, 1866.—This invention consists of a still, within which is a smaller still. Each still communicates with a condensing coil in the vessel, each coil terminating in an escape neck. The coils are provided with pipes for the escape of gases that will not condense. The necks communicate with pipes connected with the stills by means of troughs shown by the dotted lines in the drawings. The vessel contains crude petroleum, which is heated by the con-

densing coils, and the said vessel is provided with a condensing pipe passing through the rank, and terminating in an escape neck, directly over the trough attached to the pipe. The crude oil is passed from the vessel into the still through the pipes.

Claim.—First, the method herein specified of preparing crude oil for distillation by evaporating the benzine and other volatile substances by a coil of pipe containing heated vapors, and returning the condensed benzine into the crude oil, as specified.

Second, supplying the crude or partially crude petroleum in a heated state from a vessel *e* containing the same to the outer still *b*, and passing the condensed products of the still *b* back into the inner still *c*, for the purposes and substantially as specified.

Third, the cock *s*, or its equivalent, in combination with the stills *b* and *c*, for the purposes set forth.

Fourth, the vessel *e* for containing crude oil, in combination with the stills *b* and *c*, and condensing pipes *d* and *g*, for the purposes and as set forih.

Fifth, the conical bottom to the inner still, applied as and for the purposes set forth.

No. 53,168.—ARTHUR MOFFATT, Washington, D. C.—*Priming Cartridges.*—March 13, 1866.—This invention consists in combining the centre priming and the annular or flange priming in the same cartridge, making it applicable to fire-arms that use the centre-primed cartridge; it also consists in having the anvil with this double priming made removable; also in having a wad or anvil consumable when the cartridge is fired.

Claim.—A combined rim and centre or flange and centre-primed cartridge, having an anvil to explode the fulminate that is in its centre and around its periphery.

Second, a wad or anvil primed with a fulminate, said wad or anvil being consumable when the cartridge is fired, substantially as herein set forth.

Third, an anvil primed with a fulminating material in its centre and around its periphery, substantially as and for the purpose herein set forth.

Fourth, a removable disk or anvil constructed so as to form a bearing for the fulminate around the periphery and in the centre of the base of the cartridge case, substantially as herein set forth.

No. 53,169.—CHARLES MONTAGUE, Hartford, Conn.—*Paper-cutting Machine.*—March 13, 1866.—This invention consists of a mechanism for bringing down the serrate-edged knife upon the paper, said mechanism being operated by a band wheel; also in a mechanism for imparting a reciprocating motion to the knife after it has been brought down upon the paper.

Claim.—First, the arrangement of the reciprocating knife worked by hand, the vertically moving knife frame C J and clamping frame B I, toothed racks B C, pinions L M, and shafts X X′, substantially as herein set forth.

Second, the notched bar E, pivoted arm F, reversible pawl *a* and ratchet wheel H, arranged with reference to each other, and with the rack and pinion of the clamping frame B I, substantially as set forth for the purpose specified.

No. 53,170.—JOHN C. MORGAN, Alliance, Ohio.—*Steam Pump.*—March 13, 1866.—The object of this invention is to pump liquids by the action of steam on the upper side of a piston working in a cylinder filled with water or other liquid, and render available the pressure of the liquid on the under side of the piston by the condensation of steam and consequent vacuum in the cylinder, after the completion of the downward stroke of the piston. It also consists in the combination and arrangement of the pendulum, sleeve, arm, gibs, and pipes, and the combination and arrangement of the pulley, wrists, pendulum, float, and weight; also the combination and arrangement of the pendulum, arm, valve, cylinder, pipe, valves, float, pulley, rope, and weight.

Claim.—First, the pendulum I′, sleeve L, and arm *u*, in combination with the slide valve *m*, gibs *p*, and pipes M N, arranged in the manner and for the purpose substantially as set forth.

Second, the pulley I, wrists *u′*, and pendulum I′, in combination with the float *f′* and weight *h′*, arranged in the manner and for the purpose substantially as described.

Third, the float *f*, weight *h′* and pulley I, in combination with the pendulum I′, arm *u*, and valve *m*, arranged in the manner and for the purpose substantially as set forth.

Fourth, the cylinder A, pipe C, and valves B D, in combination with the float *f* and pulley I, rope or chain *h* and weight *h′*, when arranged in the manner and for the purpose set forth.

No. 53,171.—JOHN MUMMA, Middletown, Ohio.—*Harvester Rake.*—March 13, 1866.—This invention consists in a mechanism for causing an intermission in the motion of the fork for any length of time necessary to the accumulation of a gavel upon the platform; and in mechanism for elevating the fork during its return motion, in order that it may not sweep the grain off the platform.

Claim.—First, the combination of the crank friction wheel *d* and lever *g* with the fork *f* and its fixed fulcrum block *h*, arranged and operating substantially as described for the purpose set forth.

Second, the construction of the lever *g* in the manner described when operated by the pin or friction roll on the rear face of the wheel *d*, for elevating the fork during its return motion, substantially as and for the purpose specified.

No. 53,172.—S. R. Nye, Barre, Mass.—*Horse Rake.*—March 13, 1866.—This invention consists of a dog mounted on the axle near the hub of one of the wheels to be used in connection with a toothed plate secured to the hub of another one of the wheels, the former being thrown into gear by an arm carrying a friction wheel, said arm being connected with a rock shaft, which is operated by a foot lever near the driver's seat. The invention also consists in a spring pawl for holding the axletree, which is the rake head, in such position as to cause the rake teeth to bear upon the ground, and also for enabling the aforesaid lever to permit the rake to rise bodily from the ground.

Claim.—First, the dog or clutch C, in combination with the toothed plate D on the hub of the wheel, and with the friction roller *c*, substantially as shown and described.

Second, the spring pawl *g*, arranged and operating substantially as and for the purpose specified.

No. 53,173.—Eben T. Orne, Chicago, Ill.—*Tin Can Opener.*—March 13, 1866.—This invention consists of a shank, stationary cutter, and a revolving shear. The shank, stationary cutter, and circular plate which supports the revolving shear are forged from the same piece of steel; the revolving shear is attached to the circular plate by means of a rivet, so that the sharp edge of the shear may operate closely against the sharp edge of the stationary cutter.

Claim.—The sharp-edged revolving shear E, in combination with the stationary cutter F, when constructed as described and operated for the purpose set forth.

No. 53,174.—Frederick Ortlieb, Williamsburg, N. Y.—*Fan Blower.*—March 13, 1866.—This invention is explained by the claims and engravings.

Claim.—First, arranging a series of spiral or oblique blades on each side, extending equidistant radially with the blades of the fan blower, and rotating therewith, in the manner and for the purposes substantially as herein specified.

Second, the construction of the hub C and arrangement of the spiral or oblique blades E E and E′ E′, relatively thereto, whereby the centre of the casing of the blower is closed to the air, and the air is forced indirectly in range of the fan wings, substantially as herein described.

Third, the casing constructed with its sides open to the full circumference of a circle circumscribing the fan wings, and with yokes F F, by the removal of one of which the whole rotating portion of the fan is allowed to be drawn out without taking apart the casing, substantially as herein set forth.

Fourth, the combination and arrangement of the open-sided casing A, the hub C, closing the centre of the said casing, the two series of spiral or oblique blades E E and E′ E′, the fan wings B B and the open yokes F F, all substantially as herein specified.

No. 53,175.—Charles Oyston, Little Falls, N. Y.—*Nozzle for Fire Engines.*—March 13, 1866.—This invention has for its principal object spreading the stream of water issuing from the nozzle of fire engine's hose, and is accomplished by means of a revolving sleeve sliding over a series of levers, and thus bringing to the centre the several dividers in part or in the whole to produce greater or less spread of the water at the will of the operator. The spreaders or divergers are also encompassed by a shield for their protection from injury.

Claim.—First, giving the spreaders what I term a "periodical" movement, by means substantially as herein described or any other equivalent means, for the purpose set forth.

Second, the combination of the jacket D with the spreaders B and nozzle A, substantially as and for the purpose described.

No. 53,176.—Elias C. Patterson, Chicago, Ill.—*Washing and Wringing Machine.*—March 13, 1866.—This invention consists of a slatted bed working on the pivot by the weight of a slatted roller and operating as a lever to adjust the lower roller of a wringing machine attached to one end of the tub.

Claim.—First, the working of the bed C over a pivot D, forming a lever in combination with the roller, substantially as described.

Second, the manner of constructing the wringer in combination with the bed piece C and roller B, substantially as described.

Third, the combination of the apron H with the bed piece C, substantially as described.

No. 53,177.—Jonathan Peacock, Rockford, Ill.—*Barrel Washing Machine.*—March 13, 1866.—This invention principally consists in a frame or frames made adjustable to receive a series of barrels of different sizes, and also removable, that they may be taken from out their place, or by an arrangement of head plates to allow but one of the frames and series of barrels to be operated at a time. At the top of the machine and over the barrels is arranged a trough or fountain for water or suds, having in it an index by which to indicate the quantity of water to be discharged from the fountain to barrels of any size, and also a series of elastic pipes leading from the bottom of the fountain to the barrels, with a gate or valve to let on or shut off the water from said pipes, which pipes are controlled by a swinging frame which removes them to or from the barrels at pleasure. The operation of washing is performed by

power applied to pulleys upon the end of the shaft on which the frames and barrels are arranged for revolving them.

Claim.—First, the arrangement of the revolving frame or frames, provided with head plates F and adjusting screws d'' and i, in combination with the clamp screws f g, as and for the purpose set forth.

Second, the arrangement of the wheel k and spring catch h, in combination with the head plates F and revolving frames, as and for the purpose set forth.

Third, the hose lifter P, in combination with the water trough, as and for the purpose set forth.

Fourth, the slide H, shifter T, and spring valve R, in combination with the trough and index, as and for the purpose specified.

No. 53,178.—CHARLES PERLEY, New York, N. Y.—*Vertical Windlass.*—March 13, 1866.—This invention consists in a chain wheel upon a capstan shaft capable of being connected with the same, in combination with a power capstan, so that the apparatus has facility for operating upon a heavy chain, with a slow motion, or upon a lighter chain with a faster motion.

Claim.—The chain wheel p', in combination with the capstan f and chain wheel p, substantially as set forth.

No. 53,179.—S. PETTIBONE, Corunna, Mich.—*Feed Cutter.*—March 13, 1866.—This invention consists in a mode of fastening the pivot arm to which the knife or cutter is hung to the mouth-piece, and by which it is made adjustable.

Claim.—Securing and holding the pivot arm of a feed cutter to its mouth-piece by means of wedges or keys, substantially as herein described and for the purpose specified.

Also, in combination with the above, passing the rear portion of the pivot arm through a mortise or slot of the stationary mouth-piece or any part connected thereto, substantially as herein described.

No. 53,180.—IGNATIUS PHILBROOK, Shelby, Ill.—*Corn Husker.*—March 13, 1866.—This invention consists in the conformation of a metallic plate to fit and protect the palm and inside of the fingers, and is provided with a hook for opening the husk.

Claim.—The plate A, when constructed substantially as described so as to perfectly protect the hand and fingers, and provided with the hook point C, as and for the purposes specified.

No. 53,181.—MORITZ PINNER, New York, N. Y.—*Self-acting Blow-pipe.*—March 13, 1866.—This invention consists of an automatic blower for the purpose of driving a current of air, in combination with a gas jet or equivalent means of applying fuel for a blow-pipe. The blow-pipe is to be used by jewellers for soldering, for heating sad-irons, and generally where a small manageable heat is required.

Claim.—First, a self-acting or automatic blow-pipe, operating substantially as herein set forth.

Second, an automatic blowing machine that could be used for supplying or exhausting air, or both, alternately.

Third, the combination of an automatic blowing machine with a gas jet or its equivalent, so as to produce a manageable and easily transferable flame, substantially as described.

Fourth, the combination of the devices herein described, or their equivalent, for heating sad-irons, stoves, and other articles; for soldering, glass-blowing, and other industrial and domestic operations for producing a blow-pipe heat, and for the various other objects and purposes hereinbefore set forth and described.

Fifth, the combination of an automatic fan with an air chamber, substantially as described.

No. 53,182.—THOMAS PRICE and JAMES H. WILSON, Covington, Ky.—*Sand Box for Locomotive Engines.*—March 13, 1866; antedated March 5, 1866.—This invention consists in constructing a box with a hemispherical bottom, in the lower part of which is a conical valve seat, which is closed by a valve of the same form. This valve seat has two apertures, one on each side of the engine, through which the sand passes, and is conveyed to the rail in front of each driving wheel.

Claim.—The construction of a sand box having an opening connecting with two pipes e e', said opening having a valve d, all constructed as above described and for the purpose set forth.

No. 53,183.—EMMETT QUINN, Washington, D. C.—*Steam Gauge.*—March 13, 1866.—This invention belongs to that class in which two fluids of different specific gravities are used to indicate the pressure of steam in the boiler. It consists of such a construction of the couplings between each upright tube that the fluids can be conveniently introduced and secured therein, a proper proportion of each fluid remaining in each tube, said fluid being thus prevented from mingling with other fluids, and in this way destroying the efficacy of the gauge. Safety in transportation is thus also secured.

Claim.—A steam gauge constructed substantially as described, as an article of manufacture.

No. 53,184.—ALBERT T. RAND, New York, N. Y.—*Mode of Preparing Vessels for Holding Gunpowder.*—March 13, 1866.—This invention consists in applying to the inside of the vessel a coating of water-proof material, such as paraffine, asphaltum, &c.

Claim.—Coating a keg, barrel, cask, or other package internally with either of the substances before mentioned, or with a mixture of any or all of them, as described and for the purposes set forth.

No. 53,185.—ASSARIA REWERICK, San Francisco, Cal.—*Pumps.*—March 13, 1866.—In this invention a piston and its cylinder receive a reciprocal movement, by the action of a pitman, at each end of a lever, having a fulcrum placed centrally between them.

Claim —The cylinders A and M, and pistons H and N, with their valves, when arranged and operated substantially as described.

No. 53,186.—O. H. P. ROBINSON, Bellport, N. Y.—*Axle Box.*—March 13, 1866 —This invention consists in placing balls within the bearing that supports an axle, said balls having a diameter about equal to the width of the annular space between the axle and the box, supposing the two to be concentric.

Claim.—First, surrounding an axle or shaft, having a rotary motion, with free spherical bodies enclosed within an annular space formed around the axle or shaft, so as to form the bearing of such axle or shaft, substantially as described.

Second, the false axle H, combined with axle B, made and applied substantially as above set forth.

No. 53,187.—WILLIAM H. ROBERTSON and GEORGE W. SIMPSON, Hartford, Conn.—*Breech-loading Fire-arms.*—March 13, 1866.—This invention consists in a peculiar combination of a lever, link, and cartridge retractor, with a segmental swinging breech piece.

Claim.—The combination of the segmental breech piece C, guard lever H, link F, shell drawer L, and toe *g* thereon, all the said parts being constructed and arranged to operate together as herein specified.

No. 53,188.—H. S. ROSE, Bath, N. Y.—*Sofa Bedstead.*—March 13, 1866.—This invention consists of a sofa bottom with transverse slats, and a supplemental frame with transverse slats so arranged that the slats of one frame fit snugly and slide between those of the other frame.

Claim.—The sliding supplementary frame B, having its bottom composed of slats *d*, secured at their rearmost ends to the longitudinal bar *n*, supported by the transverse bar *m'*, the said slats *d* working between the slats *b*, which form the bottom of the main frame or body of the sofa or lounge, all substantially as herein set forth, for the purpose specified.

No. 53,189.—ISRAEL M. ROSE, New York, N. Y.—*Drilling and Driving Machine.*—March 13, 1866; antedated February 16, 1866.—This invention relates to certain improvements for sinking artesian wells, and particularly such as yield oil, wherein contrivances for drilling the wells and extracting the detritus therefrom and driving down the tubing, are required.

Claim.—First, the arrangement of the slide D, pulley *b*, and ropes *a* and *a'*, substantially in the manner and for the purpose described.

Second, the combination of a paying-out contrivance and tappet wheel E with the suspension rope *a* and drill rope *a'*, substantially as described.

Third, The tappet-wheel shaft B, eccentric *e*, pawls *c c*, and ratchet wheel *b'*, with the flanged drum C, ropes *a* and *a'*, all operating substantially as described.

Fourth, the tappet wheel E, constructed substantially as described, out of two disks and a transverse pin *d*, and fitted to the shaft B so as to periodically become loose and fast on said shaft, for the purpose set forth.

Fifth, the reel G, in combination with the tappet shaft B, and suspended reciprocating pulley *b*, the parts being arranged substantially as described.

Sixth, the application of a crank shaft N to the frame A A' of a machine adapted for pipe driving and drilling, so that said frame may be used for operating a pump, substantially as and for the purpose described.

Seventh, constructing the jar of a drill with flanged cutters *m m* on it, adapted to serve as reamers, substantially as described.

No. 53,190.—GEORGE SCOTT, Kensington, Penn.—*Lubricator.*—March 13, 1866.—This invention consists in having continuous lines of pipes to convey the lubricating fluid throughout the line of shafting, and other pipes to return the oil to the pump or cistern, where it is again forced through the pipes. There are several other modes of circulation described.

Claim.—First, supplying lubricating fluid to the bearings of revolving shafting from one or more pump or pumps, cisterns or tanks, whence the lubricating fluid is conducted through pipes following the lines of shafting, and through branches from the same, with or without stop-cocks, on to each separate bearing, such bearings being further provided with receptacles and pipes connecting the same, for conducting away the lubricating fluid to a pump or pumps, by which it is again raised into the upper pipes for supplying a constant circulation of the lubricating fluid while the shafting is in motion, or in case of hollow shafting being

used, passing the lubricating fluid through the centre of the shaft, and distributing the fluid on to the bearings through small cavities or holes in the bearing.

Second, the construction and employment of apparatus for lubricating the bearings of shafting or axles, in which a revolving wheel, disk, or bent radiating hollow arm, situated in a cistern containing lubricating fluid, is made to convey the lubricating fluid on to the top of the bearing in cavities formed on the circumference of the disk, such cavities having side orifices that are kept closed until the cavities arrive at or near the top of the bearing.

No. 53,191.—SAMUEL SHREFFLER, Joliet, Ill.—*Brick Mould.*—March 13, 1866.—This invention consists in a mould with a wooden frame, open at the bottom, and having partitions, together with a lining of movable sheet metal of one piece, adapted to the shape of the above mould, and filling the same. The bricks having been pressed on the sheet metal, the latter is lifted up by detaching it from the wooden frame; it then presents the bricks detached, the one from the other, and ready to be taken away.

Claim.—First, constructing a mould for making brick, having a frame A with partitions B, and the slotted sliding plate C, formed and combined substantially as and for the purposes set forth.

Second, in combination with the plate C, the hook F and catch D, substantially as and for the purpose set forth.

No. 53,192.—C. F. SMITH, Litchfield, Conn.—*Butter Worker.*—March 13, 1866.—The object of this invention is to work out all the buttermilk in the manufacture of butter, and to form the latter into rolls without handling. The invention consists in a heart-shaped or shield-shaped box to receive the butter, and in the form of the stamps fitted to work in grooves in the ends of the shields, said stamps being attached to a hand lever, at each up and down motion of which, the butter between the beater is alternately compressed and rolled half over.

Claim.—First, the form and construction of the shield-shaped tub as described, for the purpose herein specified.

Second, the two stamps D D′ working in the circular grooves in the shields A A, the same being attached to the hand lever F, operating in the manner described.

Third, the fluted stamp D and the concave stamp or beater D′, in combination with the shield-shaped tub, for the purposes set forth.

No. 53,193.—OLIVER SNOW, Meriden, Conn.—*Facing for Stair Treads.*—March 13, 1866.—This stair-tread facing is a sheet-metal plate, perforated for the purposes of ornamentation, to reduce the weight of metal, and to produce a roughened surface of a form proper to the tread, to which it is to be applied, and having an imperforated margin all around, and countersunk holes for the screws, which are to be used for fastening it to the tread.

Claim.—The herein described sheet-metal facing for stair treads, as a new article of manufacture.

No. 53,194.—JOHN T. STAATS, New York, N. Y.—*Amalgamator.*—March 13, 1866.—This invention consists in subjecting the ore to the action of mercury and the vapor of mercury, in a closed vessel revolving over a furnace.

Claim.—The amalgamation of metallic ores in a closed vessel by the joint action of mercury, mercurial fumes, and agitation resulting from the rotation of such vessel, as specified.

No. 53,195.—JOHN STORER, New York, N. Y.—*Lubricator for Steam Engines.*—March 13, 1866.—The object of this invention is to lubricate mechanism, whether or not it be enclosed where pressure exists; and in a removable cap, whereby to speedily attach and remove it. It also consists in the combination of the cap, with its projections, the valve, the screw, the groove, and openings in the upper part of the cap.

Claim.—The cap D, with projections C C, the valve or inner lid E and the screw F, in combination with each other, and with the groove *a* and openings *e e* in the upper part of the cap, substantially as herein specified.

No. 53,196.—H. N. SWIFT, Matteawan, N. Y.—*Hat Forming Machine.*—March 13, 1866.—In this invention the driving wheel is placed in a vertical position, and motion is transmitted from it to the frame, which carries the formers by means of a sun and planet gear, in such a manner that the web passes slower over the former at half motion, while the motion of the driving wheel continues; and thus the banding is effected without stopping the vibration. The sun and planet gear is susceptible of adjustment to regulate the vibration while passing the centre.

Claim.—First, placing the driving wheel *d* of a hat-forming machine in a plane parallel with the axis of the pin or stud *a* on which the frame C oscillates, instead of at right angles to the same, substantially as and for the purpose described.

Second, the sun and planet gear *h j*, or its equivalent, in combination with the driving wheel *d* and oscillating frame C, which carries the rolls D, substantially as and for the purpose set forth.

Third, the adjustable wrist pin *w*, in combination with the pinion *h*, cog wheel *j*, driving wheel *d*, and oscillating frame C, constructed and operating substantially as and for the purpose described.

No. 53,197.—GEORGE B. TAYLOR, New York, N. Y.—*Neck-tie.*—March 13, 1866.—This invention consists of a device in imitation of a neck-tie, centrally from the rear of which projects a button, and to which at each side are attached hooks, the points of which are turned inward toward the button.

Claim.—The device A for securing a neck-tie or ribbon on the neck, including the hooks C C at the rear side of the device, and the button or stud B, substantially as and for the purpose specified.

No. 53,198.—D. H. THAYER, Ludlowville, N. Y.—*Reaping and Mowing Machine.*—March 13, 1866.—In this invention a hollow gear or shaft is placed loosely on the main axle, and extends some distance below the same to receive and support the crank shaft passing through it at right angles to the axle; upon this crank shaft, in front of the gear block, is placed a sleeve which carries the cutting apparatus, allowing it to conform to the surface of the ground over which it is drawn; this sleeve is held in place on the shaft by means of a flanged rim formed upon its rear end, and a lip attached to the gear block, as shown by the figure.

Claim.—The head or block G placed loosely on the axle A, with the shaft H passing through it, and the latter having the crank pulley M on its front end, in combination with the gearing I J H arranged as shown, to communicate motion from the axle A to shaft H, and the sleeve or collar P, to which the finger bar Q is attached, placed loosely on the shaft H, all arranged to operate in the manner substantially as and for the purpose set forth.

Also, the securing of the sleeve or collar P on the shaft H by means of the flange *b* on the rear end of the sleeve or collar, and the lip *c* at the front side of the head or block G, substantially as described.

No. 53,199.—CYRUS L. TOPLIFF, New York, N. Y.—*Device for Feeding Pins.*—March 13, 1866.—In this invention the paper with the pins is arranged in rows in the usual manner, and fed up between two rollers so as to expose a row of pin heads in a position convenient for removal, one by one, as required; when the row is exhausted the rotation of the rollers brings another row into the required position. It is adapted for toilet or desk use.

Claim.—First, a pin-supplying device, consisting of the rollers *d* and *f*, when arranged in relation to each other and to the case, substantially as described.

Second, the roller *e*, in combination with the rollers *d f*, guide bar *j*, and box A, constructed and operating substantially as and for the purpose set forth.

No. 53,200.—ELMER TOWNSEND, Boston, Mass.—*Peg Rasper.*—March 13, 1866.—This invention consists in the combination of a rapidly moving cutter, with a salient end of an arm of a long and taper form, and in the combination of such a cutter with guards.

Claim.—The combination of a cutter with the end of a long inclined arm, and arranged to operate for the purpose described.

Also, in combination with a cutter so arranged, of guards, for the purpose specified.

No. 53,201.—W. W. WADDELL, Hillsboro', Ohio.—*Telegraph Insulator.*—March 13, 1866.—This invention consists of a shank to enter the telegraph post, provided with a two-pronged stem projecting at right angles from its outer end. The said prongs are coated with vitreous enamel, and surround the wire.

Claim.—The telegraph insulator, constructed as herein described, with the shank A, stem B, horns C C′, shoulder D, and coating E, of vitreous enamel, all constructed and arranged as and for the purposes specified.

No. 53,202.—JOHN H. WAIT, Portsmouth, Ohio.—*Device for Changing Speed.*—March 13, 1866.—This invention consists of a series of conical gear-wheels, arranged so as to readily admit of a change of speed in whatever mechanism it may be applied to.

Claim.—The series of conical gear-wheels *b b′*, in combination with the movable frame *d* and two conical gear-wheels *e e′*, arranged as above described and for the purpose set forth.

No. 53,203.—HENRY WATERMAN, Brooklyn, N. Y.—*Apparatus for Cleaning Boiler Tubes.*—March 13, 1866.—The object of this invention is to clean the tubes of boilers of dirt, cinders, &c., and to do this effectually and with greater facility than by means heretofore adopted for such purpose.

It also consists in a series of spring scrapers arranged around a shaft, in combination with a clearing-out piston, the spring scrapers being constructed different lengths, whereby to be enabled more conveniently to insert them within a tube.

Claim.—A series of spring scrapers arranged around a central stock, in combination with a clearing-out piston or disk, substantially as set forth.

Also, the spring scrapers constructed of different lengths, whereby the series can be more conveniently inserted within the tube, as set forth.

No. 53,204.—ALFRED WEED, Boston, Mass.—*Machine for Cutting Files*.—March 13, 1866.—This invention consists in a certain arrangement of devices for gradually and simultaneously accelerating the feed motion of the blank, and increasing the tension of the spring which imparts force to the blow of the chisel, so that the cuts shall be deeper and also be separated by a wider space, one from another, on the broad portion of the blank, than at and near the point. Other improvements are devices for imparting the feed motion, this motion being primarily obtained not from a screw, or from a rack and pinion, but by the friction of smooth surfaces one upon another.

Claim.—The combined arrangement of parts operating together substantially as described, for varying relatively to each other, at the same time and from the same indicator, the force of the cutting blow and the extent of the feed movement.

Also, the employment of the friction pawl *h'*, acting upon the surface of the feed wheel *h*, substantially as set forth.

Also, in combination with the feed wheel *h*, the brake wheel *k'*, operating as a detaining pawl, substantially as set forth.

No. 53,205.—W. S. WEIR, Jr., Monmouth, Ill.—*Cultivator*.—March 13, 1866.—This invention consists of a joint for connecting plough beams to the frames of cultivators, in order to admit of the plough having a vertical and lateral movement.

Claim.—The combination with the plate D, ears *g g*, and journal *e*, of the grooved bearing plates C C, cylindrical projections *c c*, plates B B, and screw bolt *f*, all constructed and arranged to operate in the manner and for the purpose specified.

No. 53,206.—JAMES W. WESTON, New York, N. Y.—*Lining for Artificial Limbs*.—March 13, 1866; antedated March 5, 1866.—This invention is explained by the claim and engraving.

Claim.—A lining for artificial limbs, at the part where the stump is received, formed of thin sheet cork, substantially as and for the purposes specified.

No. 53,207.—OSCAR WHEDON, Medina, N. Y.—*Device for Watering Cattle*.—March 13, 1866; antedated March 2, 1866.—This invention consists in a cistern and trough said to be arranged in such manner in relation to each other that, though they are connected by a pipe, and the water in the cistern is generally much higher than that in the trough, yet only such an amount of water will flow from the former as will suffice to fill the latter.

Claim.—The combination and arrangement of the several parts, consisting of the cistern A, conductor pipe B, trough C, connecting pipe D, and bent pipe E, all as shown and for the purposes specified.

No. 53,208.—J. D. WHELPLEY and JACOB J. STORER, Boston, Mass.—*Method of Burning Waste Coal*.—March 13, 1866.—This invention consists in blowing coal dust, charcoal dust, and other substances finely pulverized, into the fire-box of a furnace by means of a current of air.

Claim.—The use of finely comminuted fuel, or dust of fuel, mingled with the air used in supporting the combustion of the gases of furnaces and fire-boxes.

No. 53,209.—JOHN G. WILKISON, Quincy, Ohio.—*Method of Propelling Wheeled Carriages*.—March 13, 1866.—This machine is intended to be supplied with motive power at the hands of an operator standing upon it, who sets it in motion by means of a shaft centrally located crosswise of the vehicle, said shaft being provided with pulleys, which are connected by belts with the axles. Suitable provision is made for rotating the centrally located shaft, and for giving direction to the carriage.

Claim.—The shaft E, provided with the pulleys F F and the wheels K K, bands G H, pulleys C, for propelling the vehicle, in the manner and for the purpose herein specified.

No. 53,210.—J. H. WILKINSON, Kickapoo, Ill.—*Wagon Brake*.—March 13, 1866.—This invention consists in a mechanism for connecting the brakes with a sliding reach of a carriage truck, whereby the brakes are thrown down to the wheels, by the forward tendency of the hind wheels in going down hills, in such manner that an automatic brake is secured.

Claim.—First, the rods *e e*, and *f f*, in combination with the clip D, and brakes E E, substantially as shown and described.

Second, the clip D, in combination with sliding reach B, and stationary reach C, and brakes E E, substantially as and for the purpose specified.

Third, the combination of the sliding reach B, stationary reach C, clip D, brakes E E, rods *e e* and *f f*, and hind and forward axles of a vehicle, all operating together substantially as and for the purpose specified.

No. 53,211.—JOHN R. WINFIELD and WILLIAM S. COLWELL, Pittsburg, Penn.—*Stave Machine*.—March 13, 1866.—This invention consists in the employment of devices for forcing the split stave through between two stationary knives, cutting the stave to the shape to conform to the circle of the barrel when completed.

Claim.—Constructing the forcing bar D with a revolving head N, for taking the friction

off the end of the bolt during the operation of forcing it through the space between the knives, as herein set forth.

Also, in making the guide box A, that supports and carries the forcing bar D, adjustable so as to give direction to the bolt, and cause it to press or bear hardest against either knife, as the nature and size of the wood may require.

No. 53,212.—GEORGE W. ZEIGLER, Tiffin, Ohio.—*Cultivator.*—March 13, 1866.—This invention consists in the construction of a shovel plough, with a movable cross arm or plate, and so arranging the same that the shovels can all be moved either to the right or left of the beam in oblique directions to the line of draught; and also in the application of spring braces to the pivoted shovels and standards.

Claim.—First, constructing the shovel plough with a movable cross arm or plate C, and so arranging the same that the shovels can all be moved either to the right or left of the beam in oblique directions to the line of draught, substantially as specified.

Second, the application of spring braces *k* to the pivoted shovels and their standards, substantially as described.

Third, the construction of the shovel-holding plate C, with lugs *c c*, to receive the outside shovel standards, and also with a flat upper surface having notches in it to receive spurs which project from the bottom surface of the flanged casting B, substantially as described.

Fourth, the construction of the central standard *g'* with a pin *e*, so that the plates C B can be secured to the beam A, in the act of securing the central shovel to the plough, substantially as described.

Fifth, the combination of the flanged casting B with the shovel holder C, these two parts being constructed substantially as described.

Sixth, the construction of the shovels with detachable points *p*, substantially as described.

Seventh, providing for adjusting all the shovels about a central axis simultaneously, when these shovels are attached to standards that can be adjusted and secured in position independently of each other, substantially as described.

No. 53,213.—JOHN W. ZINN, Caldwell, N. J.—*Railroad Switch.*—March 13, 1866.—This invention consists in the attachment of a movable rail to a spring which has a tendency to always bring them in line with the main track, and are kept locked in that position by means of a catch on the under side of the switch rail; when the switch lever is pressed downward this catch is released, and the rails brought in connection with the side track.

Claim.—The combination of the lever H, locking bar F, spring K, switch rails C C, projection P, and spring latch N, constructed and operating substantially as described and represented.

No. 53,214.—C. K. BRADFORD, Lynn, Mass., assignor to himself, C. B. SANDERSON, and M. TERRILL, Jr., same place.—*Device for Propelling Carriages.*—March 13, 1866.—This invention consists in a mechanism for readily increasing the leverage according to the power required to be exerted by the hand levers; also in communicating motion from the hand levers to the wheels, by means of a friction clutch so arranged as to have a propelling action only when the levers are moved in one direction.

Claim.—First, the combination of the connecting-rods B with the friction-band K and the clutch C, transmitting motion to the wheel G, as described, in one direction only, substantially as and for the purpose described.

Second, the combination of the pivot-pin L with the lever A, having notches E E, so that the leverage may be increased or diminished at will, for the purpose described.

Third, the combination of the notched levers A with the combination set forth in the first claim, so as to allow greater power to be exerted without increasing the length of the stroke.

No. 53,215.—EBENEZER CARY, assignor to himself, HORACE H. HAWLEY and JOHN SULLY, Burlington, Iowa.—*Car Coupling.*—March 13, 1866.—This invention consists in the employment of a suspended coupling-pin supporter, and a coupling pin of peculiar shape, which is fitted and works in a hole or aperture of peculiar form in the draw-head, these parts being used in connection with a link and draw-head of peculiar construction.

Claim.—In combination with the coupling-pin D, constructed as described, the peculiar shaped opening *c*, in the draw-head A, whereby the pin being raised and turned may be supported independently of the block in the draw-head, in the manner as herein described.

No. 53,216.—L. A. DOLE, assignor to himself and A. R. SILVER, Salem, Ohio.—*Machine for Boring Hubs.*—March 13, 1866.—This invention consists in the employment of a single chuck-plate on one side of a supporting frame in conjunction with an adjustable support applied to the opposite side, for setting the auger-shaft at any desired angle, so that the contrivances for centring, holding, and boring the hub are all sustained upon a frame during the operation. This invention also consists in a method of centring and securing wheels by their hubs, and also supporting them by their rims in a plane parallel to the chuck.

Claim.—First, the arrangement of the fixed chuck-plate D, adjusting-plate C, hollow sup-

porting frame A, and the turning cap *c*, with its adjusting bearing plate c^2, substantially as described.

Second, the arrangement of the scroll adjusting-plate C, chuck-plate D, oscillating-nut *m*, auger shaft B, and adjustable bearing c^2, substantially as described.

Third, the radial arms E, provided with adjustable sliding blocks *j j*, in combination with a centring chuck and auger shaft, substantially as described.

Fourth, the stepped blocks *j*, when applied to radial arms E, and used substantially as described.

No. 53,217.—H. L. EDDY, Geneva, N. Y., assignor to himself and A. DUNLAP, Ovid, N. Y.—*Method of Preserving Wood.*—March 13, 1866.—This invention consists in thoroughly saturating the wood to be preserved with petroleum, by soaking the wood in the petroleum until it has penetrated all the pores.

Claim.—The application of petroleum or its liquid products to wood or other fibrous substances, as an antiseptic or preservative agent.

No. 53,218.—OLIVER O. G. ELLIOTT, assignor to himself and A. R. SAMUEL, Philadelphia, Penn.—*Mode of Grinding the Mouth Edges of Glass Jars.*—March 13, 1866.—This invention is fully explained by the claim.

Claim.—Grinding the mouth edges of glass jars by simultaneously revolving a series of them against a grinding disk in motion, substantially as and for the purposes described.

No. 53,219.—SAMUEL FAWCETT, assignor to himself and ALANSON BROWN, Rochester, N. Y.—*Coupling Shafts of Boring Tools.*—March 13, 1866; antedated March 2, 1866.—This invention consists in scarfing the end of each section or rod and tapering the one upon the other; the two adjoining surfaces being corrugated transversely to prevent them from being drawn asunder, and the whole is surrounded by a tapering sleeve forced up tightly upon the joint by a jam-nut.

Claim —The manner of coupling or joining two pieces together by means of a corrugated or irregular joint, a taper sleeve or band fitting over the same, in combination with jam nuts to hold it firm, substantially in the manner and for the purpose described.

No. 53,220.—LOUIS B. GUSMAN, assignor to himself and EDWIN STEER, Philadelphia, Penn.—*Linch-Pin.*—March 13, 1866.—This invention consists of a slotted linch-pin, in combination with a spiral spring which encircles the end of the axle, the said spring being constructed and connected with the linch-pin in such manner that, although it may be readily raised so as to allow the pin to be withdrawn, it cannot be thrown from its position by the jolting of the vehicle, but holds the pin securely in its place.

Claim.—The linch-pin C, with its slot *x*, in combination with the spring D, the latter being constructed and attached to the linch-pin, substantially as and for the purpose described.

No. 53,221.—GEORGE B. HAMILTON, Washington, D. C., assignor to himself and A. NOERR, same place.—*Ore Washer.*—March 13, 1866.—This invention consists of a hollow cylinder set in a semicircular cistern, one end of which is higher than the other, said cylinder being provided with oblique ribs, the arrangement of which is such that the ore passes from the upper to the lower end of the cylinder, and the water from the lower to the upper.

Claim.—First, the construction and use of the oblique agitator or hollow cylinder, so arranged and operated that the water flows from the lower to the upper end of the cylinder, substantially as described.

Second, discharging the washed ore through the shaft of the cylinder, as set forth.

Third, the use of the trunks G, for dipping the water into the cylinder C, substantially as specified.

Fourth, the combination of the cylinder C with the trips L, lever M, and sieve K, substantially as described.

No. 53,222.—ALBERT HEBBARD, assignor to himself and JOHN P. ONDERDONK, Buffalo, N. Y.—*Car Spring.*—March 13, 1866.—This invention consists in constructing and arranging a metallic spring within a metallic spiral spring in a manner to form a nest of spiral springs, each spring being distinct from the other, and the whole acting together as one spring.

Claim.—A metallic nest spring, the several separate springs thereof being coiled, the first right and the second left, and so on alternately, and placed in nest, for the purposes and substantially as described.

No. 53,223.—JAMES HOTCHKISS, assignor to himself and EZRA BUSS, Springfield, Ohio.—*Brick Machine.*—March 13, 1866.—This invention consists in an arrangement for producing a machine for moulding and pressing bricks in one process. The pressure is produced by two sets of toggle arms, respectively above and below the mould wheel, which latter has an intermittent motion, so as to be stationary while applying the pressure. The toggles are operated through connecting rods by eccentrics on a vertical shaft, and the mould wheel is actuated by a pawl driven by a crank on the same shaft.

Claim.—The combination of the continuously-revolving inclined arms *a a*, in the pug mill, with the intermittingly-moving mould wheel G, substantially as herein specified.

Also, the side chamber *c*, extending from the pug mill over the exit path of the mould wheel, for the purpose set forth.

Also, the removable block K, closing the outer end of the chamber *c*, and held therein by the wooden or frangible pin *k*, for the purpose specified.

Also, the arrangement of the scraper L, with its lever O, and adjustable weight *d*, substantially as set forth.

Also, the combination of the two toggle joints or sets of toggles M M and N N, actuated substantially as described, in combination with the intermittingly-moving mould wheel G, for pressing the bricks, while yet in the forming moulds, substantially as herein specified.

Also, the combined arrangement of the adjustable toggle-moving eccentrics Q Q. and the crank T, and pawl R, for giving an intermittent motion to the mould wheel, substantially as herein described.

Also, the combination of the crank wrist U, pawl R, sliding thereon, and the frangible pin *t*, for the purpose set forth.

Also, the combined arrangement of the projections *g g* on the periphery of the mould wheel, the pawl R, and spring pressure roller *h*, for the purpose specified.

Also, the hinged or movable track S, under the mould wheel, in combination with the adjustable toggles N N beneath it, as herein specified.

Also, the device for tilting the bricks edgewise from the followers upon the mould wheel, arranged and operating substantially as herein set forth.

Also, the arrangement of the spring roller W, in combination with the mould followers J J, for the purpose specified.

Also, the suspension of the followers J J in their moulds, by means of the notch or slot *e* in each, and the pins *f f*, or the equivalent thereof, substantially as herein set forth.

No. 53,224.—James A. and Henry A. House, assignors to Bridgeport Knitting Company, Bridgeport, Conn.—*Knitting Machine.*—March 13, 1866.—In this invention the needles are linked together by hooks and eyes into an endless chain; the chain may be lengthened or shortened, by the removal or introduction of needles. The sinkers, thread guides and stitch hooks are all connected to the same frame and operated from the same crank. The chain passes over two cog wheels, one of which is adjustable relatively to the other to admit of properly distending the chain.

Claim.—First, a chain of needles in a knitting machine, when the same are constructed so as to be hooked together substantially in the manner and for the purpose specified.

Second, constructing the needles with their hooked ends upon one side of their centre, substantially as and for the purpose set forth.

Third, one or more hooks *e*, in combination with the chain of needles, when the chain of needles is constructed and arranged to operate substantially in the manner and for the purpose herein set forth.

Fourth, the combination of one or more hooks *c* with a vibrating sinker *a'*, constructed and arranged to operated together substantially in the manner and for the purpose specified.

Fifth, the adjustable stand N', arranged in combination with and constructed so as to adjust the movement of the cam a^2.

Sixth, the working bar A', constructed and arranged so as to operate the hook *e*, the thread guide D', and sinker *a*, substantially in the manner and for the purpose described.

Seventh, one or more yarn guides D', in combination with one or more hooks *e*, and a chain of needles, when the said chain is constructed in the manner described.

Eighth, the combination of levers A^2 and L', with the switching lever P, substantially in the manner and for the purpose described.

Ninth, the combination of the latch S and the switching lever P, substantially as and for the purpose specified.

Tenth, the combination of one or more stops T with the chain and needles, when arranged to operate the switching lever P, substantially as and for the purpose set forth.

Eleventh, the pressure spring S^2, in combination with a chain of needles, when the chain of needles is constructed and arranged to operate substantially as and for the purpose set forth.

Twelfth, the protecting plates r^2 and r^2, covering the wheels E and E, in the manner and for the purpose described.

No. 53,225.—Joseph Hurford, Salem, Ohio, assignor to Joseph P. Gill, Franklin, Ind.—*Composition for making Anatomical Casts.*—March 13, 1866.—This invention consists of a composition made by reducing paper to pulp and adding to every pound of the paper so prepared one ounce of alum. Hot water is then added to bring the composition to a proper condition for moulding.

Claim.—A composition for making casts, compounded and prepared substantially as set forth.

No. 53,226.—Henry Köhly, Jr., assignor to himself and J. Curtis, Potosi, Mo.—*Evaporator and Cooler.*—March 13, 1866.—This invention consists of a volute channel

secured to the top of a boiler which is partially filled with water. This boiler is placed over a fire chamber, and is surrounded with an air jacket. The liquid to be evaporated is supplied to the channel by means of a tube which has a trap at its lower extremity to prevent the escape of steam. The steam escapes from the boiler into the air space, through a tube which is regulated by a valve; the liquid after passing through the channel escapes by means of a trap box.

Claim.—First, the air space I, formed between the jacket F and boiler C, in combination with the boiler D, volute channel A, and flues H J, constructed and operating substantially as and for the purpose described.

Second, making the boiler B partially or wholly self-supplying, by carrying into it the condensed water resulting from the steam over the volute channel, substantially as and for the purpose set forth.

No 53,227.—ALVIN LAWRENCE, assignor to himself, AMBROSE LAWRENCE, and JOHN E. CRANE, Lowell, Mass.—*Pie or Plate Tongs.*—March 13, 1866.—This invention consists in so bending and connecting two pieces of wire that the said two pieces shall form the coil or hinge, spring, forks or holders and legs of the tongs.

Claim.—First, the combination of the legs A and B, the same having drops *g* and *b*, and toes *c* and *h*, the coil or hinge *k*, handles *d* and *l*, spring *m*, drop *e*, and toe *f*, the whole arranged substantially as and for the purpose specified.

Second, and in combination with the legs A and B, and the coil *k*, the drops *g b* and *e*, or their equivalent, substantially as and for the purpose specified.

Third, and in combination with the legs A and B and coil *k*, and in connection with the drops *g b* and *e*, the toes *c h* and *f*, substantially as and for the purpose explained.

Fourth, and in combination with the handle *d* and *l*, the legs A and B, and coil *k*, the spring *m*, when the said spring forms a part of one handle, and acts against the other, substantially in the manner and for the purpose set forth.

Fifth, the coil *k*, in combination with the legs A and B, and handles *d* and *l*, when the said coil is made to serve as a hinge and stop, substantially as and for the purpose set forth.

No. 53,228.—AMOS LELAND, assignor to himself and ALEXANDER P. COLESBERRY, Philadelphia, Penn.—*Machine for Perforating Metal Bands.*—March 13, 1866.—This invention consists of two cylinders, from one of which project pins into recesses in the adjacent cylinder, and on each of which is a rib with a cutting edge, so that the bands of metal passed between the two will be perforated and cut into strips of the lengths desired. A spring is secured in the upper cylinder to retain the end of the band when cut.

Claim.—First, the cylinder H with its pins *a*, and rib *c*, and the cylinder I with its flanges *b*, openings *i*, and rib *e*, constructed and operating in respect to each other, as and for the purpose specified.

Second, the combination with the cylinder H of the spring *d*, for retaining the ends of the bands, substantially as described.

No. 53,229.—CHARLES and DAVID MERCER, Strickersville, Penn., assignors to BLYMYER, BATES & DAY, same place.—*Evaporator.*—March 13, 1866.—This invention consists of a pan, provided with a steam chest, which is situated under the bottom of the pan in such a manner that the sides of the pan project over the chest.

Claim.—First, applying the steam beneath the bottom of the pan in such a manner as to heat the centre and leave cooling sides for a deposit or rest of the scum.

Second, applying steam beneath an open pan so that the interior thereof shall be unobstructed for the work of the operator.

Third, the combination with evaporating pans of a steam chamber, constructed as described.

No. 53,230.—JOHN F. MILLIGAN, assignor to himself and RICHARD BRANCH, St. Louis, Mo.—*Fastening for Bale Hoops.*—March 13, 1866.—This invention consists of a button secured to the under side of one end of the hoop, at an angle relatively to the length of the hoop, which button is used in connection with a slot made through the other end in a direction parallel to the length of the hoop, whereby it becomes necessary to twist one end of the hoop out of its natural position in order to lock and unlock the same.

Claim.—The button *a*, with its head set obliquely to the plane of the hoop and with an oblique flange *d*, operating in the manner and for the purpose herein described.

No. 53,231.—ALBERT L. MUNSON, New Haven, Conn., assignor to himself and SAMUEL T. WILLIAMS, Washington, D. C.—*Leggings.*—March 13, 1866.—This invention is fully described by the claim.

Claim.—First, a legging made wholly or partially of paper, whether united to the boot foot as a boot leg or separate therefrom as a gaiter or anklet, or imitation of stocking leg or drawers, all substantially as described, and whether embossed, or printed, or painted, or stained, or enamelled, or perforated, or otherwise ornamented or not.

Second, making such article to open in the direction of its length.

Third, connecting the sections of said opened legging by means of elastic attachment, whether of cloth or cord.

No. 53,232.—Thomas J. Parke, assignor to himself, Josiah Bryan, Israel Gillespie, and E. A. Huntsicker, Philadelphia, Penn.—*Well Boring Apparatus.*—March 13, 1866; antedated November 8, 1865.—This invention consists of an arrangement of devices for the purpose of forming an efficient and economical apparatus for boring artesian wells.

Claim.—First, the cam wheel H, plate J, with its pin *d* and the arm L. constructed and operating in combination with each other and the rope to which a rock drill is attached, substantially as described.

Second, the screw rod N secured to a vibrating lever in combination with the adjustable box O, yoke P, and clamp plates *n n'* or their equivalents, substantially as and for the purpose specified.

Third, the box O with its spring K, combined with the rod N, its nut and the rope X, substantially as and for the purpose described.

No. 53,233.—Milo J. Proctor, Lowell, Mass., assignor to self and Wheelock Tilton, of same place.—*Direction Label.*—March 13, 1866.—The following is the specification of this invention: *a* represents the wire, *b* the loop, *c* the lap, *d* the hole, *e e* the position designed for the wire *a*. The loop *b* projects through the hole *d;* the lap *c* is then folded over the wire *a*, cemented down, and the label is finished.

Claim.—First, the wire *a*, which gives strength and firmness to the label.

Second, the loop *b*, which gives convenience in attaching the label to articles for the purposes described and manner set forth.

No. 53,234.—Jesse F. Richards, Attleborough, Mass., assignor to the American Eyelet Company, Providence, R. I.—*Eyelet.*—March 13, 1866.—The peculiarity of this eyelet consists in the metal at the tip end being drawn out so that it will present a thin edge, that of the other or flanged end being of the usual thickness.

Claim.—The improved eyelet possessing the characteristics substantially as herein described.

No. 53,235.—Jesse B. Rumsey, Tiffin, Ohio, assignor to J. G. Rumsey, Washington, D. C.—*Car Brake.*—March 13, 1866.—This invention consists partly of a brake shaft connected by chains, with a lever so arranged that when the said brake shaft is turned the head of the lever is drawn by the chains towards the centre of the car, whereby a cam upon said lever is pressed against the brake and the latter forced against the wheels.

Claim.—The combination of the lever D, with the chains E, brake shaft F, and brake C, when used in the manner and for the purposes herein set forth.

No. 53,236.—W. E. Sibley, Weston, Mass., assignor to N. L. Sibley, of same place.—*Gearing for Rollers.*—March 13, 1866.—This invention consists of an independent gear wheel for connecting the pinions of two feeding rollers, said gear wheel having external and internal teeth, arranged to mesh properly with the teeth of the pinions, whether the rollers are near each other or far apart. The shafts of the pinions are the pivots of the internal and external gears, and are linked together so that the pinions work always at the same distance from their respective gears.

Claim.—Connecting the shaft of the rollers B B' by the pinions C and I, and the external gear D and internal gear H, substantially as described.

Also, linking the shafts of the rollers or pinions and the pivot of the external and internal gears together substantially as described, so that the pinions and gear will always mesh properly whether the rollers are worked near together or far apart.

Also, the plate J in combination with the pinion and gear substantially described for the purpose set forth.

No. 53,237.—F. Sundell, assignor to himself and Anthony Chabot, New York, N. Y.—*Quartz Mill.*—March 13, 1866.—This invention consists in a revolving cylinder partially covered with fine wire gauze outside of slats with spaces between them, but having a wall, so that as the cylinder revolves, such of the quartz that is not ground fine enough to go through the gauze will in its revolutions be conducted back again into the cylinder to be rebroken by the slats and plates or balls in the cylinder.

Claim.—First, the rotating cylinder consisting of the heads C C' and slats D, and provided with the strips or plates *d d**, plate F, feed opening *a*, openings *e*, and strips *f*, all arranged to operate in the manner and for the purpose herein specified.

Second, one or more screens E, applied to the cylinder to operate in connection therewith, substantially as and for the purpose set forth.

No. 53,238.—J. R. Widgeon, assignor to himself and Fred. E. Frey, Bucyrus, Ohio.—*Automatic Boiler Feeder.*—March 13, 1866.—The object of this invention is to supply steam generators with the requisite quantity of water, and no more, notwithstanding the device is constantly kept in motion, thus keeping a uniform height of water in the boiler. Its novelty consists in the combination of a segmental cog wheel, with a chamber having ports, and with a seat, p rovided with holes.

Claim.—The segmental cog wheel *n*, in combination with the chamber A, having ports *l m*, and with the seat B, provided with holes *d e f g*, substantially as and for the purpose described.

No. 53,239.—W. H. WINANS, assignor to himself and W. R. FINCH, Coxsackie, N. Y.—*Burglar Alarm for Windows.*—March 13, 1866.—In this invention the opening of the sash releases a metallic plate furnished with grooves through which the clapper of the bell passes. This is connected with a second plate underneath grooved in a like manner; upon the first plate being released it is pulled backward by a spring and takes with it the second plate, releasing thereby the clapper, which is operated by a spring.

Claim.—The stationary plate K, in combination with the sliding plate L, provided respectively with slots *a b*, and arranged with the clapper rod G of an alarm, to operate when applied to a window, substantially in the manner as and for the purpose herein set forth.

Also, the latch or fastening *g*, on the top of the alarm case A, in combination with the clapper rod G, to operate as and for the purpose specified.

No. 53,240.—HUGH BAINES, Manchester, England.—*Railroad Track.*—March 13, 1866.—This invention is explained by the claim and engraving.

Claim.—The combination of ties, longitudinals, diagonals, rails, fish plates, lock latches, expansion and contraction miters resting on chairs of the diagonals, at every quarter of a mile, more or less, of the railroad, allowing no expansion or contraction at each rail length, but making one continuous rail for a quarter of a mile, more or less, to expand in and contract out of miters E and G, substantially as described.

No. 53,241.—PHILIBERT CHEVALIER, Lyons, France.—*Manufacture of Coloring Matter from Aniline.*—March 13, 1866.—This invention consists in the production by peculiar means, from aniline or other homogeneous substance, of two coloring matters not hitherto produced therefrom, viz: red and violet.

Claim.—First, as new products the coloring matters herein described, derived from aniline and its homologues.

Second, the process of producing the said coloring matters, substantially as herein described and set forth.

No. 53,242.—EDWARD LORD, Todmorden, England.—*Machine for Bending Cranks on Rods.*—March 13, 1866.—This machine is intended for bending heated iron. It consists of slides on which the heated bars are laid, and to which they are clamped, and a mechanism for moving the slides toward each other and toward the bar, by which combined motion the bar is bent into crank form. Provision is made for removing the bar after it has been properly bent.

Claim.—The combination and arrangement of machinery described and shown in sheet 1, or any equivalent therefor or modification thereof, for bending straight bars of iron into cranks, by the simultaneous action of blocks and dies, actuated by screws or otherwise.

No. 53,243.—THOMAS ROGERS, Liverpool, Eng.—*Binder Guides for Sewing Machines.*—March 13, 1866.—This invention consists in the arrangement of parts designated by the claim, and will be understood by reference to the engraving.

Claim.—First, hinging the upper plate B to the lower plate Q, and operating the upper plate B, to bring it near to or away from the lower plate by means of a spring and a thumb screw and screw threaded pin, for the purpose of adjusting the distance apart of the guides D F, substantially as shown.

Second, in combination with the above, the tension bar V V, constructed and operating in the manner and for the purpose explained.

Third, in combination with the binder, constructed as herein described, the guides D and F, attached to and arranged to slide back and forth for adjustment in separate plates B and Q, as described.

No. 53,244.—GUSTAVE EMILE ROLLAND and EMILE LEON ROLLAND, Paris, France.—*Composition for Cleaning and Scouring Textile Fabrics.*—March 13, 1866.—This invention consists of water, two gallons; saponia or soap wort, one pound; and liquid ammonia, one-half gill.

Claim.—As a new article of manufacture the improved liquid composition for cleansing, scouring, and bleaching textile, animal, mineral, and vegetable substances, composed of the ingredients and prepared in the manner herein described.

No. 53,245.—PHILO SOPER, London, Canada.—*Dental Drill.*—March 13, 1866.—In this invention a tool-holder projects from one end of a cylinder, which encloses a main spring and train of wheels; when the machine is wound up and set running, a rapid revolving motion is imparted to the tool-holder and drill fixed therein. A universal joint in the holder enables the bearing of the tool upon the work to be varied at the will of the operator.

Claim.—First, the combination of a spring power substantially such as herein described,

with the spindle *b*, and tool-holder *o*, constructed and operating as and for the purpose set forth.

Second, the universal joint *n*, in combination with the spindle *b*, tool holder *o*, and with a suitable spring power, constructed and operating substantially as and for the purpose described.

Third, the arrangement of two or more bearings, *r r'*, in the end of the conical box, to operate in combination with the spindle *b* and tool holder *o*, substantially as and for the purpose set forth.

No. 53,246.—W. W. Smith, Cincinnati, Ohio.—*Telegraph Insulator.*—March 13, 1866.—This invention is an arrangement adapted to greatly diminish or entirely remove the tendency of ascending currents of fog, mist, or vapor, to form a conducting medium upon the surface of the insulating material.

Claim.—First, the reflexed or cup-formed insulating block B, enclosed in a chamber C of post or projection therefrom.

Second, in the described combination with the above, the perforated cap or annulus F *f*.

No. 53,247.—Charles Heaton, New York, N. Y.—*Process for Disintegrating Fibres.*—March 13, 1866.—This invention consists in a process of first treating crude vegetable material, from which it is desired to make paper, with a caustic alkaline solution, for the purpose of properly preparing the fibre to be acted upon by mechanical pressure, after which they are reduced to pulp without the aid of any further chemical reducing agents.

Claim.—First, the above-described process of converting vegetable fibrous material into pulp, by first applying to the material a caustic alkaline solution, or a solution in which caustic alkaline properties predominate, in order to prepare the material to be acted upon mechanically, and then reducing such material so prepared to pulp by mechanical action or its equivalent, substantially in the manner set forth.

Second, the process of treating crude vegetable fibrous material by a caustic alkaline solution, or a solution in which caustic alkaline properties predominate, when such treating is not for the purpose of reducing the material to pulp by dissolving its gummy portions, but is is for the purpose of simply softening the material.

Third, the process of subjecting vegetable fibrous material to mechanical pressure, for the purpose of reducing or disintegrating such material, when it has previously been treated with a caustic alkaline solution, or with a solution in which caustic alkaline properties predominate, substantially in the manner described, whether the material is afterwards further reduced or not.

Fourth, the process of making coarse paper from vegetable fibrous productions by separating the fibres without dissolving or removing the gums, so that the gums shall enter into and form a part of the paper, substantially as set forth.

No. 53,248.—Charles Heaton, New York, N. Y.—*Process for Disintegrating Fibres.*—March 13, 1866.—The material, such as cane, bamboo, straw, and the like, is first prepared by cutting into suitable lengths, and then worked in an alkaline solution of 2° Beaumé. It is then placed between heavy rolls, and then pulped in the ordinary manner, by means of which brown paper will be produced. For white paper the preliminary soaking should be in alkaline solution of about 5° Beaumé, and the pulp should be subjected to the ordinary bleaching process.

Claim.—First, the process of reducing fibrous material to pulp by means of mechanical pressure, instead of reducing such material to pulp by the action of chemical agents, whether such agents are or are not used in connection with heat.

Second, the process of subjecting pulp, or vegetable fibrous matter which has been imperfectly reduced to pulp, to mechanical pressure for the purpose of further reducing undisintegrated portions of the same.

No. 53,249.—Thaddeus Hyatt, Philadelphia, Penn., assignor to Elizabeth Lake.—*Manufacture of Caramel.*—March 13, 1866.—This invention consists in furnishing burnt sugar with a dry base of its own, which reduces it to a powdery condition and protects it from the air. It is then in proper shape for being mixed as an adulterating material with coffee at any moment, so that the coffee need not be ground until wanted for use.

Claim.—As a new manufacture dry caramel, substantially as and for the purpose herein described.

No. 53,250.—Thaddeus Hyatt, Philadelphia, Penn —*Preparation of Coffee.*—March 13, 1866.—This invention consists in placing in the roasting cylinder about one-fifth of the usual quantity of green coffee, thus increasing the relative volume of hot air and reducing the time required to roast it. The coffee is roasted until it assumes the color of chocolate. It is then emptied from the cylinder, and every grain will be found glossy with oil.

Claim.—As a new manufacture, oil-developed coffee, substantially as and for the purposes herein described.

No. 53,251.—Dennis G. Littlefield, Albany, N. Y.—*Attaching and Hinging Covers to Stoves, Teakettles, &c.*—March 13, 1866.—This invention is explained by the claim and engraving.

Claim.—The use of a cylindrical-keyed pivot pin, in combination with a circular notched aperture for the purpose of hinging and securing swinging covers upon stoves, teakettles, or similar open-topped vessels, substantially in the manner herein set forth.

No. 53,252.—Frederick E. Adam, Baltimore, Md.—*Stove.*—March 20, 1866; antedated March 9, 1866.—In this invention a number of vertical plates along each side of the stove form a series of cells; under the grate and at the bottom of the stove is an air passage leading to the end of the stove and up to the exit pipe, near which there is a damper; when the damper is open the air can flow up and around into the combustion chamber. A wood grate may be used, or a coal grate can be easily adjusted in the doors and apertures for the admission of air. Above the fire pot is a door, having flanges or wings, which, opening inward, makes a chute for feeding coal to the fire.

Claim.—First, the arrangement of a number of plates G G along each side of the stove, and within the fire chamber D, so as to form a series of heat-retaining cells, with a central passage through said chamber, substantially as described.

Second, the air flue A, leading from the front door *a*, beneath the grate *c* and oven B and back of this oven, in combination with the damper *g* and chamber D, substantially as described.

Third, the arrangement and combination of flue A, chamber D, fire pot E, space *f*, and oven B, with the dampers *g g'*, substantially as described.

Fourth, the combination of two grates *c c'* with open-top fire pot E, hooded air passage *a'*, and the hinged door *h*, substantially as described.

Fifth, the combination of a tilting grate *c'*, which can be removed from the fire pot E with the wood grate *c*, substantially as described.

Sixth, providing the door *h* with plates *h' h'*, which are so applied that when this door is inclined inward it will serve as a chute for directing the coal into the grate, substantially as described.

No. 53,253.—R. N. Allen and C. C. Hinsdale, Cleveland, Ohio.—*Manufacture of Sheet Iron.*—March 20, 1866.—This invention consists in making up a "pile" in the usual manner, to the bottom and top of which is added a plate of steel, and the pile is then brought to a welding heat, and passed between rollers and formed into a bar. The bar thus formed is rolled into sheets, which are washed with acids, and then with water to remove the scale. The sheets are then brought to a red heat and passed between finishing rollers.

Claim.—First, making sheet-iron plate by piling and rolling in the manner substantially as set forth.

Second, the piling of iron with plates of steel upon one or both sides, for the purpose described.

No. 53,254.—E. G. Anthony, Boston, Mass.—*Coal Sifter.*—March 20, 1866.—The sieve has long journals that may be traversed diametrically in the barrel or rocked as preferred. Attached to the journals is a bent rod forming a sort of bail and constituting a handle to actuate the sifter. The sieve is sufficiently smaller than the inside of the barrel to allow these motions.

Claim.—As an improvement, the barrel coal sifters: so making and arranging the sieve with long journals, that it may be traversed diametrically in the barrel or rocked as preferred, or alternately rocked and traversed.

Also, making the journals and handle of a bent rod of metal, substantially as described.

No. 53,255.—William Armstrong.—Newark, Ohio.—*Snap Hook.*—March 20, 1866.—This invention consists in combining with an ordinary snap hook a safety hook, so arranged as to relieve the main hook of a part or all of the strain, and in case the main hook should break or be fractured by a hard pull, the safety hook will retain the ring, and thus prevent accidents.

Claim.—Combining with the ordinary snap hook a safety hook substantially as shown by Fig. 2, so arranged as to relieve the main hook of the snap of a part or all of the strain of the ring thereupon, and so that if the main hook C, Fig. 1, of the snap be fractured or broken by a hard pull upon the ring on which it is snapped, the safety hook will retain the ring, and thus prevent accident, substantially as shown and described.

No. 53,256.—Noble P. Barnes, Carmel, N. Y.—*Milk Can.*—March 20, 1866.—This invention consists of a body made of plate metal. Around the bottom or inner lower edge of the body is placed a band, which may be attached to the body of the can by rivets. Upon the upper edge of the band is placed the bottom, being made in the ordinary form, and is soldered fast to the top of the band so as to make a tight seam. The top is struck up in the ordinary form.

Claim.—As an improvement in milk cans, the combination of the cylindrical box A, band B, concave bottom C, struck up top D, constructed and secured in the manner herein described.

No. 53,257.—Joseph Barnett, Dayton, Ohio.—*Clothes Dryer.*—March 20, 1866.—This invention consists of radial arms hinged to a hub which is placed on a pole, the arms having braces beneath them so that each arm can be separately elevated or depressed at pleasure.

Claim.—The combination of the pole A, arms C C, and braces D D, with the hubs B B, when constructed as described and for the purpose set forth.

No. 53,258.—J. C. Batcheller, Wallingford, Vt.—*Machine for Forming the Shoulders on Forks.*—March 20, 1866.—This invention consists in the employment of dies so arranged as to swage or upset the metal at the point of juncture of the tines, so as to round the tines at the crotch, and not only form perfect shoulders but strengthen the metal in so doing.

Claim.—Producing rounded shoulders at the junction of the tines of a fork-blank with the tongue, by means of swaging dies, constructed and arranged substantially as described.

No. 53,259.—Ezra F. Beal, Oxford, Maine.—*Window Screen.*—March 20, 1866.—This invention consists in the arrangement of guards between the frames, spring latches, catch plates, frames and screens, to keep out flies and mosquitoes.

Claim.—The combination and arrangement of one or both the guards G, the series of studs and angular grooves and the spring latches and catch plates, or their equivalents, with the window frame and the screens, constructed substantially as described.

No. 53,260.—Jerome Billings, Brighton, Mass.—*Culinary Cabinet.*—March 20, 1866.—This invention consists of a case with drawers, flour sifter, egg-beater, rolling pins, &c.

Claim.—The flour sifter B, and the egg-beater C, combined with the cabinet A, as specified.

No. 53,261.—Hiram Bishop, Batavia, Iowa.—*Pitman Coupling for Harvesters.*—March 20, 1866.—This invention has reference to the means for adjusting the connection of the pitman with the cutter-bar, so as to compensate for wear and thereby prevent rattling. A forked connecting rod or pitman is used, each arm of which is provided with a conical point; these points enter the eye of the cutter bar from opposite sides, and are adjusted and snugly held therein by means of two notched keys and a holding pin.

Claim.—The keys B B, and pin C, in combination with the pitman A, composed of two parts *a a*, connected together at one end and provided at their opposite ends with conical pins *e e*, to fit in corresponding shaped holes in the sickle bar, substantially as and for the purpose set forth.

No. 53,262.—A. T. Blegley, Ottumwa, Iowa.—*Vegetable Cutter.*—March 20, 1866.—In this invention the square box at the bottom of which the cutter revolves is encased by removable pieces fitted at the corners to confine in a circular form the body of vegetables to be operated upon.

Claim.—The combination and arrangement of the cutter C, partition P, casing S, and box D, constructed and operating in the manner and for the purpose herein specified.

No. 53,263.—Alonzo T. Boon, Galesburg, Ill.—*Gate.*—March 20, 1866.—This invention consists in the construction of an elongated angular bar, and its attachment to the under side of the top horizontal bar of a sliding gate, between the rear vertical bar and the middle one; the object of said angular inclined bar being to elevate the gate sufficiently high above the ground when slid backwards to clear the snow that may be on the ground in the winter season.

Claim.—The construction of an elongated angular or inclined bar *a*, as arranged when used in combination with a pivoted friction roller *b*, substantially in the manner and for the purpose as herein set forth.

No. 53,264.—Jesse C. Boyd.—Rushville, Ind.—*Ditching Machine.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The spading wheel E, arranged to operate in the frame N, in connection with the plough K, having the cutters P, and chute M, when the same are connected with the axle of the traction wheels A, by means of the curved bar L, and operated by the cog rim B, and wheels C and D, substantially in the manner and for the purposes set forth.

No. 53,265.—John Braun, Philadelphia, Penn.—*Loom.*—March 20, 1866.—In this invention two hooks acting alternately upon the teeth of the ratchet-wheel give it two motions for one revolution of the shaft, thus enabling the loom to run "pick and pick." To run "single pick" one of the hooks is disconnected. The pattern chain has projections of varying heights upon its several links.

Claim.—The combination of the ratchet wheel U, the pattern chain wheel M, and the two hooked connections from the main shaft, as and for the purpose described.

No. 53,266.—J. Smith Briggs, Chicago, Ill.—*Apparatus for Desulphurizing Ores.*—March 20, 1866.—This invention consists in washing the disintegrated ores in a suitable vessel provided with spiral flanges on the inside, and with a head, to prevent a draught of air through said vessel. There is a tall chimney, one hundred feet in height, through which the heated ore is dropped to burn off the sulphur.

Claim.—First, heating metalliferous ores and dropping them in a heated state through the air, for a suitable distance, substantially as and for the purpose herein shown and described.

Second, the employment of a revolving cylinder N, provided with internal spiral flanges F, in combination with an adjustable head E, arranged and operating substantially as specified and for the purpose set forth.

No. 53,267.—FRANKLIN M. BUEL, Truxton, N. Y.—*Method of Protecting Wood.*—March 20, 1866.—This invention consists in coating wood with a paste composed of pulverized slate rock, lime, and coal or gas tar.

Claim.—The preservation of wood from decay and the effects of moisture by coating the same with a paste, prepared substantially in the manner herein set forth.

No. 53,268.—ABNER BURBANK, Rochester, N. Y.—*Flour Bolt and Bran Duster.*—March 20, 1866.—This invention consists of corrugated wire-cloth forming the sifting surface of bolts and dusters, the corrugations being made for the purpose of strengthening the wire-cloth.

Claim.—As an improved article of manufacture, a bolting cylinder, the reticulated covering of which is formed with corrugations or ribs extending latitudinally around it, as and for the purposes herein specified.

No. 53,269.—W. H. BUTLER, Chicago, Ill.—*Steam Pump for Railroad Stations.*—March 20, 1866.—The object of this invention is to supply water to the tender of locomotives at railroad stations, and to do this with facility and despatch. It consists in a floating follower with a tank, and with reference to an inlet pipe, exit pipe, and valve.

Claim.—The arrangement of the floating follower F, with the tank A, and with reference to the inlet pipe E, exit pipe C, and valve B, whereby to supply locomotive tenders with water at railroad stations, as herein set forth.

No. 53,270.—MATTHIAS CARSTEN, New York, N. Y.—*Fire-kindling Composition.*—March 20, 1866.—This invention consists of cotton fibre saturated with tallow and rosin, and sprinkled with pulverized charcoal.

Claim.—The fire-kindling composition prepared of the ingredients and substantially as specified.

No. 53,271.—WILLIAM CLEVELAND, Orange, N. J.—*Stop Faucet.*—March 20, 1866.—This invention consists: First. In a screw or pin passing through the outer end of the faucet into the bowl of the same, and thence into a slot in the pin or outlet of the faucet, by which means the pin is not only held to its place in the bowl, but also limits the rotating of the pin.

Second. In a pin inserted underneath the bowl where a portion of the bowl is flattened, and by such flattening forms shoulders for the pin to strike against and thereby also limit the rotating of the pin or outlet of the faucet as well as holding the pin or outlet to its position in the bowl.

Third. In a small ledge or projection surrounding the orifice of the faucet for the purpose of holding the packing to its place in the bowl, and the more effectually securing a water-tight joint and preventing leakage.

Claim.—Securing the key to the bowl or body of a faucet by means of a screw passing through the bowl or body and its point passing into a slot in the key, and by a pin or screw inserted in the key and turning on or against the bottom of the body, so that the key by means of said screw and pin may be prevented from leaving the body of the faucet, but freely turn therein a defined distance, substantially as described.

Also, surrounding the orifice of the faucet by a projection which will imbed itself in the packing or lining of the faucet, so as to entirely prevent leakage between the bowl and said packing or lining, substantially as herein described.

No. 53,272.—JAMES R. CLUXTON, Russellville, Ohio.—*Neck-tie.*—March 20, 1866.—In this invention the hooked ends of a staple enter into the rear of the back pad and secure the bow thereto; a wire loop to press upward against the shank of the shirt-button is hinged to this staple.

Claim.—First, the spring piece *d*, which clasps the button of the collar and is hinged to the staple *c*, constructed and operating substantially as deseribed and represented.

Second, the staple *c*, forming by means of its hooking ends the means of attachment of the pad and bow, and also forming a pintle for the hinged spring frame, substantially as described and represented.

No. 53,273.—DAVID E. COLE, Manayunk, Penn.—*Manufacture of Vinegar.*—March 20, 1866.—This invention consists in the use of tomato juice, molasses, and yeast for the manufacture of vinegar. The composition is mixed with water and allowed to ferment for twelve days, after which more molasses is added and also a small quantity of isinglass, and the whole is allowed to ferment again.

Claim.—The converting of tomato juice, with the combination of sorghum and yeast, rapidly into vinegar by its precise treatment.

No. 53,274.—GEORGE A. COOPER and CONSIDER SOUTHWORTH, Stoughton, Mass.—*Bonnet Frame.*—March 20, 1866.—In this invention size or other material is applied to the bonnet wire, causing the fibres of the thread or silk wrapping to adhere to the wire and to each other.

Claim.—A bonnet frame constructed of sized wire, substantially as described.

No. 53,275.—CHARLES D. COPELAND, Fall River, Mass.—*Knife-cleaning Box.*—March 20, 1856.—This invention consists of a small box with a division for brick-dust and an inclined plane for polishing that is removable at pleasure; the box contains a buffer or polisher of a triangular shape covered with felt.

Claim.—As a new article of manufacture the knife-scouring box, made substantially as described.

No. 53,276.—ROBERT CUNNINGHAM, Chicago, Ill.—*Ankle-supporter.*—March 20, 1866.—This invention consists of an ankle-supporter intended to be used with skates, and made in three parts or sections.

Claim.—An ankle-supporter especially intended to be used with skates, made in three parts or sections B C and D, connected together substantially in the manner and so as to operate substantially as described when applied in any proper manner to the skate and leg of the person, as specified.

No. 53,277.—M. C. DAVIS, Guilford, Ohio.—*Machine for Shearing Sheep.*—March 20, 1866.—In this machine a vibrating motion is communicated to the cutter while being moved in any direction or passed over the body of the sheep in shearing the same, so that two different persons may work with one machine at the same time and operate upon two different animals, while either cutter may be stopped independently of the other by simply releasing the lever which holds up its driving-shaft. The machine may be driven by horse, dog, steam or water power.

Claim.—First, the arrangement of the two shafts I, jointed bars J, and the levers L, or their equivalents, whereby said shafts may be raised and lowered and rendered operative and inoperative when desired, substantially as and for the purpose specified.

Second, the bars O S V X, connected by hinge joints, in combination with the swivel joints Q T of the bars O S, the pulleys N Z B′, belts A′ C′, rollers *k*, and cutters composed of a vibrating cutter Y, and three or more fixed ones *c*, all arranged to operate substantially in the manner as and for the purpose set forth.

No. 53,278.—DANIEL DISHART, Canton, Ohio.—*Washing Machine.*—March 20, 1866.—In this invention two series of slats of a triangular shape and covered with metal are made to pass over each other reciprocally by means of a crank shaft and its connections.

Claim.—The arrangement of the wash-boards H H, as constructed with their slats L L, the crank-shaft E, connecting links J I, stuffing-box K, and box G, the several parts being used as and for the purpose herein specified.

No. 53,279.—EDWARD DITHRIDGE, Pittsburg, Penn.—*Bouquet-holder.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The bouquet-holder, constructed substantially as described, consisting of a glass globe stand, silvered on the inner surface, with a cup-shaped depression entering the cavity of the globe, as a new article of manufacture.

No 53,280.—WILLIAM L. DOOLING and DAVID CHRISTMAN, Jr., Zanesville, Ohio.—*Composition for Coating Vessels for Petroleum, &c.*—March 20, 1866; antedated March 6, 1866.—This invention consists of a composition of glue, one pound; sorghum molasses, one pint; beeswax, one ounce; and rosin, one ounce.

Claim.—A compound and the manufacture of the same, composed substantially of the ingredients before mentioned, and its application to the interior surfaces of barrels and other casks designed to be used for holding the hydrocarbon oils.

No. 53,281.—GEORGE DUNCAN, San Francisco, Cal.—*Roofing Compound.*—March 20, 1866.—This invention consists in treating common burlaps with a mixture of gas tar, asphaltum, and coke dust. The material thus prepared is placed upon the roof and covered with a composition of gas tar and the residuum of bituminous coal oil.

Claim.—Preparing burlaps with the tarry and bituminous composition, and covering the same with bituminous compounds, in the manner and for the purpose set forth.

No. 53,282.—ANDREW L. ECKERT, Newark, N. J.—*Hand Punch.*—March 20, 1866.—This invention refers to a hand punch, the main jaw of which forms three prongs to operate in combination with the punch, and with the secondary jaw or spring lever.

Claim.—A hand punch, the main jaw of which forms three prongs *a b c*, to operate in combination with the punch *d*, and with the secondary jaw or spring lever B, substantially as and for the purpose described.

No. 53,283.—Joseph Firmenich, Buffalo, N. Y.—*Beer Faucet.*—March 20, 1866.—In the vertical plug a hollow plunger is arranged to descend upon an eduction tube, which ascends from the bottom of the plug. The flue is thus suspended, and the force with which the plunger descends expels a minute quantity of liquid from the space around the lower fixed tube, through slight perforations in the top thereof.

Claim.—First, a faucet having a tube projecting up to an indefinite point within the vertical plug D, and fitting the inside of the plunger, the end of said tube fitting the bottom of the plunger when closed to prevent leakage, substantially for the purposes herein described.

Second, the hollow plunger D, when made so that the lower end when closed will fit the lower cap F, the tube E at the same time fitting the bottom of the cavity of the plunger D, for the purposes and substantially as herein set forth.

Third, the main plug B, the vertical plug A, in combination with the plunger D, and tube E, all for the purposes and substantially as herein shown and described.

No. 53,284.—Joseph Firmenich, Buffalo, N. Y.—*Steam Generator.*—March 20, 1866.—This invention consists in constructing a generator in two sections, joined together by a sheet of metal, and between which the fire chamber is located. Each of the sections is provided with flues leading from the fire chamber, and at their outer ends they are provided with a conical cover, which terminates in a pipe which leads along and above the boiler, longitudinally to the centre thereof, where a fire blower is combined with it and a pipe which leads to the ash-pit underneath the grates, by which means the entire unconsumed products of combustion are again returned to the fuel and through the flues, and so on continuously.

Claim.—First, a steam boiler provided with one or more flues in such a manner that the current or draft is continuous, and all or nearly all the products of combustion are returned through the boiler and fire grates, for the purposes and substantially as herein described.

Second, the fan F or its equivalent, in combination with the flues C C and H, for the purposes and substantially as herein set forth.

Third, the arrangement of the self-feeding fuel chamber G, between the sections of the boiler, substantially as and for the purposes described.

Fourth, the arrangement of the self feeder having a double chamber around which water circulates in connection with the boiler and to prevent the burning out of the fire chamber, at the same time facilitating the generation of steam, for the purposes and substantially as herein described.

No. 53,285.—Adalbert Fischer, New York, N. Y.—*Apparatus for Cooling Beer, &c.*—March 20, 1866.—This invention consists of a series of annular vessels communicating with each other by means of pipes, and provided with an inlet pipe and draught pipe, the whole being contained in a tank filled with ice or cold water.

Claim.—The combination and arrangement of the series of annular cylinders B C, connecting pipes D E G, and tank A, as and for the purpose specified.

No. 53,286.—Henry Fisher and Milton Ball, Canton, Ohio.—*Horse Hay-Fork.*—March 20, 1866.—This invention consists in providing the two bars, to which the tine is pivoted, with shoulders and the elevating lever with a slot so that the fork will be held in position for elevating the load by the shoulder of the outer bar falling or resting upon the shoulder of the inner or main bar.

Claim.—The bars A and B, provided with the shoulders E and F, the slotted lever D, and the spear C, the several parts being constructed and arranged to operate as and for the purpose herein specified.

No. 53,287.—Henry Flad, St. Louis, Mo.—*Filter.*—March 20, 1866.—This invention consists in the use of a mineral known as "tiff" or heavy spar; alone or in combination with other minerals used in filtering water.

Claim.—First, in combination with filters or strainers composed of layers or strata of common stone or any other substances now commonly used, a stratum of pulverized "tiff" or sulphate of baryta of the proper fineness of grain, as hereinbefore set forth.

Second, a filter or strainer composed of strata of "tiff" or sulphate of baryta, of varying fineness of grain.

No. 53,288.—Theodore Foster, Coxsackie, N. Y.—*Horse Hay-Fork.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The bent bar D, provided with the eye or opening *a*, and attached to the handle C by the hinge *b*, in combination with the latch or fastening F, composed of the slide G, and the bar provided with the catch *f*, and pivoted to the head A, all being applied to the fork and arranged to operate substantially in the manner as and for the purpose herein set forth.

No. 53,289.—George B. Fowler, New York, N. Y.—*Wood Splitter.*—March 20, 1866.—This invention consists in a splitting knife fastened in a hand-bar that is adjustable between two

standards. The knife has two edges, one on its lower edge and the other at that part of the knife next the post or standard, so that sticks of wood may be split between the knife and block or between the knife and standard.

Claim.—The double-edged knife F in combination with the lever C, when used for the purpose of a wood splitting device, in the manner and for the purpose herein specified.

No. 53,290.—CHARLES FOWNES, Pittsburg, Penn.—*Fastening for Teakettle Covers*—March 20, 1866.—This invention consists of two flat pieces of soft iron, copper, brass, &c., placed in the mould when the teakettle is to be cast, so that the latter may be cast on them. These pieces are placed in such position in the kettle that when bent over so as to form two hooks they permanently retain the lid.

Claim.—First, the two flat pieces P P, or their equivalent, used for the purpose specified.

Second, the combination of the disk K, ear or lug H′, and ledge J, cast all of one piece with the body of the kettle, with the pieces P P.

Third, securing the lids of teakettles by the hooks formed by bending over the ring E pieces of soft metal cast or chilled in the disk *k*, in the manner and for the purpose specified.

No. 53,291.—JOSEPH J. GEST, Cincinnati, Ohio.—*Car Spring.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—In combination with arched or elliptic springs, having reversed curves at their ends, a similarly arched, curved and inclined block abutment or bearing such as represented, so that as the spring settles or yields under its load it will practically become shorter and stronger, but still retain its elastic quality and be held firmly in place and to the block or bearing, substantially as herein described and represented.

No. 53,292.—JOSEPH J. GEST, Cincinnati, Ohio.—*Car Spring.*—March 20, 1866.—This invention consists in the arrangement upon an upper and under plate of alternate studs and sockets in such manner as to compress or expand a coiled spring according as the plates approach or recede from each other, whether a central plate be used between the upper and lower plates or not.

Claim.—The combination of plate springs and alternate sockets and studs on said plates, substantially as herein described and for the purpose of obtaining the greatest amount of motion with spirals worked on studs or rods in the limited space usually allowed for car and other springs, as herein explained.

No. 53,293.—SOLOMON GODFREY, Peoria, Ill.—*Grain Drier.*—March 20, 1866.—Perforated pipes, arranged in any convenient way in the drier, are covered with wire gauze; the air-heating pipe in the heating chamber is of largest diameter at the centre; by an arrangement of dampers in the pipes, the fan blower can drive the heated air through the above hot-air pipe into the drying chamber—or, cutting off its connection therewith, a current of cool air can be forced in—and, reversing the fan, the air can be drawn out from the drier.

Claim.—First, covering pipes for drying grain with wire gauze, substantially in the manner and for the purpose set forth.

Second, the employment of air-heating pipes for grain driers, having a diameter larger in the centre than at the ends, substantially as and for the purpose described.

Third, the combination and arrangement, substantially as described, of the fan, the heating and the drying pipes, for the purpose set forth.

Fourth, the method herein described of drying grain by alternate currents of hot and cold air, substantially in the manner described.

No. 53,294.—JACOB H. GREEN, North Waterford, Maine.—*Stump or Stone Extractor.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The combination and arrangement of the shears, the shore, the lever and the stirrup, or its equivalent, or the same and the wheel frame, the whole being arranged and provided with hooks and chains, or their equivalents, so as to operate in manner and for the purpose substantially as described.

No. 53,295.—DANIEL A. GOODSELL, Glen Cove, N. Y.—*Machine for Sifting Sand.*—March 20, 1866.—In this invention, a series of sieves is suitably arranged with mechanism for imparting to it a rocking motion, with an elevator operating therewith.

Claim.—The employment or use for the purpose of sifting sand, of a series of sieves B, in combination with suitable mechanism for imparting to the same a shaking motion, and with an elevator E, constructed and operating in the manner substantially as set forth.

No. 53,296.—NICHOLAS HALL, New Market, Md.—*Broom Head.*—March 20, 1866.—In this invention, a metallic shank extends from the centre of a metal socket, and at its lower extremity is joined to a hinged band, which hooks at one side, thus passing tightly and securing the corn.

Claim.—The combination of the rocket A, concave K, rod C, with bands D and F, united by the hinge G, and secured by the clasp I, and hooks H, the whole arranged and combined in the manner and for the purpose herein above set forth.

No. 53,297.—JACKSON HARRINGTON and FRANCIS CAFFREY, New Haven, Conn.—*Propeller Wheel.*—March 20, 1866.—This invention consists in forming a propeller wheel, with blades parallel to each other, in sets, with more or less space between them.

Claim.—A propeller wheel constructed so as to reduce the lug surface and enlarge the driving surface by means of parallel blades with an aperture between them, substantially as and for the purpose set forth.

No. 53,298.—CHARLES HEATON, New York, N. Y.—*Process for Evaporating Alkaline Solutions.*—March 20, 1866.—This improvement consists in a method of evaporating spent alkaline solutions for the purpose of recovering the soda contained in the same, in such manner as to confine and utilize the steam which is produced from the aqueous solution, and usually allowed to escape without being utilized.

Claim.—First, the above described process of separating the volatile from the non-volatile portions of alkaline solutions by evaporating such solutions in a closed boiler, under a pressure exceeding one atmosphere.

Second, saving the steam generated from an artificial alkaline solution, when such solution is evaporated in whole or in part in a closed boiler, substantially as set forth.

No. 53,299.—LEWIS HEYL, Philadelphia, Penn.—*Portfolio.*—March 20, 1866.—This improvement consists of a portfolio provided with an adjustable back-piece, which may be extended or contracted in such a way as to increase or diminish the distance between the side covers, and adjust them in any desired position, for the purpose of accommodating any desired number of sheets of paper.

Claim.—First, the arrangement of the movable tubes G G at the edges of both leaves of the portfolio, as and for the purpose set forth.

Second, the spring E, having the buttons or staples *f f*, in combination with the plates D D, as and for the purpose set forth.

Third, the cleats L L L, as above described and adapted to portfolios, in combination with the binding strings M M M, the said cleats having an aperture in their centre to admit of the passage of the said binding strings, as shown and described and for the purpose set forth, for the proper and convenient fastening of the said strings.

No. 53,300.—JAMES M. HICKS, New York, N. Y.—*Steam Generator.*—March 20, 1866.—This invention consists of a series of vertical tapering tubes arranged above the tapering fire-box, and in combination with such tubes, two thimbles which surround them for the purpose of inducing a circulation of the water around such tubes; it also consists of a separator, placed around the upper portion of the tubes for the purpose of separating the water from the steam, so that the latter may be heated before leaving the boiler. Around the boiler is a fire space for utilizing the heat from the boiler, and further heating the steam.

Claim.—First, the series of vertical tapering tubes arranged and operating in the manner specified, for the purpose set forth.

Second, the combination with the tubes and thimble D, of a thimble E, arranged to operate in the manner and for the purpose set forth.

Third, the surrounding division plate or separator F, or its equivalent, in connection with the tubes and body of the boiler, arranged and operating substantially as and for the purpose set forth.

Fourth, the tapering fire-plate box A, in combination with the tapering boiler body and fire space *u*, when the said plate A and body taper in different directions, as hereinbefore described.

Fifth, the combination of the circulation-inducing thimble D with the tubes and separator F, the whole arranged to operate as and for the purpose set forth.

No. 53,301.—WILLIAM H. HORTON, Jersey City, N. J.—*Chimney Cap.*—March 26, 1866.—In this invention, the central pipe has a flange on its upper edge to shed the rain, &c.

Claim.—The flange B on the upper end of the part A of the device in connection with the cone C and cap E, all arranged substantially as shown, to insure a proper draught, and at the same time prevent the admission of rain into the device, as set forth.

No. 53,302.—P. F. HULBERT, Chatham, N. Y.—*Step Block for Carriages.*—March 20, 1866.—This invention consists of a platform and one or more steps, to be used by persons when stepping into or out of carriages, and so arranged that when not in use, they can be folded into a compact form, and carried from place to place.

Claim.—The step block herein described, the same consisting of the platform connected with any suitable base by and through supporting frames or legs at each end, and with or without an intermediate step, substantially in the manner and so as to be operated as and for the purpose specified.

No. 53,303.—M. H. HULLINGER Granville, Ill.—*Cultivator.*—March 20, 1866.—This invention consists in an arrangement for giving a lateral movement to the interior ploughs, so as to adapt them to any curves or irregularities in the rows of plants to be cultivated; also,

in a mode of connecting the plough beams together, whereby all the ploughs may be raised or lowered simultaneously, while, at the same time, the inner ploughs have a lateral motion, independent of the outer plough.

Claim.—First, the combination and arrangement of the curved bar O and the rollers T T, operating substantially as and for the purposes specified.

Second, the combination and arrangement of the beams H and I, the posts M, the standards L, curved bar O, and rollers T T, substantially as specified and shown.

Third, in combination with the above the employment of the bent levers P, the chains *c*, and stirrups Q, as and for the purposes shown and described.

No. 53,304.—Richard Ketcham, South Danville, N. Y.—*Seed Planter.*—March 20, 1866.—This invention consists in forming the conducting spout with two pieces, to receive the axle between them, and with vertical slots, to admit of the adjustment of the spout.

Claim.—The conducting spout E, formed with the two pieces *o o*, to receive the axle between them, and with the vertical slots *o' o'*, to admit of the adjustment of the spout, as described.

No. 53,305.—W. R. King, U. S. Army.—*Rock Drill.*—March 20, 1866.—This invention consists in the combination of guide hooks, rods, cross-bar, and chains, for guiding and centring the drill.

Claim.—First, the combination of the guide hooks *g*, rods *e*, cross-bar *x*, and chains *c*, for guiding and centring the drill, as described.

Second, the combination of the adjustable guide plate *a*, slides *b* and *v*, and spring *s*, for the purpose set forth.

Third, the combination of the collar *f* with the guide plate *a*, slides *b* and *v*, and spring *s*, for the purpose set forth.

Fourth, the combination of the springs *s* and *t*, Fig. V, with the guide plate *a*, slides *b* and *v*, and spring *s*, substantially as described.

No. 53,306.—E. Clarence Kirk, Baltimore, Md.—*Gun Lock.*—March 20, 1866.—In this invention, the sear-spring consists of a pin or small plunger, in a suitable recess in the frame, having a spiral spring behind it, which pin serves to keep the sear or detent in contact with the tumbler of the hammer. A small set screw is arranged to form a graduated pressure against the said spring pin, and thus vary the sensitiveness of the trigger as desired.

Claim.—First, the spring *a*, pin *b*, and screws *c* and *d*, in combination with the swinging catch E, substantially in the manner and for the purpose herein set forth.

Second, the construction and arrangement of the roller *e* and slot *f*, in combination with the curved forward end of spring G, and trigger F, substantially in the manner and for the purpose herein set forth.

No. 53,307.—Solomon W. Kirk, Coatesville, Penn.—*Manufacture of Steel.*—March 20, 1866.—This invention consists in packing scraps of tinned iron in a cast-iron mould, to press them in a compact mass. The metal thus prepared is then mixed with graphite, cast iron, or other carbonaceous material, and melted in a crucible, and run into ingots.

Claim.—Manufacturing steel from tinned iron, substantially as herein set forth.

No. 53,308.—Lucius J. Knowles, Warren, Mass.—*Mechanism for obtaining Intermittent Rotary Motion*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The combination as well the arrangement of the cranked wheel E, the slotted lever I, the spur gears F G, the bevel gear *i*, applied to the spur gear G, the bevel pinion *h*, applied to the lever, the bevel gear *g* and its shaft H, the whole being for producing an intermittent rotary motion of such shaft from a continuous rotary motion of the cranked wheel.

No. 53,309.—J. Koehler, New York, N. Y.—*Bed for Lithographic Presses.*—March 20, 1866.—This invention consists of a bed for stones from which prints are made, formed in two parts, one with a convex surface, the other with a concave, the former sitting within the latter, and capable of a rocking motion upon it, in order that the upper surface of the former may be accurately and easily adjusted on a lever, for convenience in taking impressions.

Claim.—First, the method herein specified of adjusting the beds of lithographic presses by moving one portion of the bed upon the other, the contiguous surfaces being curved, as and for the purposes specified.

Second, in combination the bearer and stone supporter, the boxes *e* and *f*, and adjustable stops *m*, for the purposes and as specified.

No. 53,310.—David Lake, Smith's Landing, N. J.—*Fly Trap*—March 20, 1866.—In this invention a perforated or wire-gauze chamber, having generally the form of a segment of a circle, and open at the two radial sides, is caused slowly to revolve by clock-work over a platform provided with several radially arranged ridges as high as the interior of the box,

which thus form an enclosure. A door or valve at the rear side of the revolving chamber, riding freely over the radial ridges, prevents escape in that direction of any flies captured by the open chamber passing over them.

Claim.—The traps for flies and other insects, the combination of a revolving case moving over a plane surface, with a series of inclined planes like K K upon such surface, and a swinging gate placed on and following such revolving case, substantially as shown.

No. 53,311.—JOHN S. LASH, Philadelphia, Penn.—*Washing Machine.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The construction of the washing machine as herein described, with the stationary concave A*a*, convex vibrating rubber DG, and swinging lever frame E, all in such manner that the machine is adapted for use in a common wash tub, as set forth.

No. 53,312.—CHARLES B. LEWIS, Clifton, Ohio.—*Mechanical Movement.*—March 20, 1866.—This improvement consists in a method of causing a shaft or pulley to rotate constantly in the same direction, without regard to the direction which may be given to the driving shaft.

Claim.—The mechanical movement, constructed substantially as above described, for causing rotary motion constantly in the same direction from a main shaft without regard to the direction of rotation of the latter, composed of two independent pulleys loose on the main shaft, and driven therefrom by means of ratchets and pawls or detents, or by their equivalents for each pulley working from opposite directions, both pulleys being connected by belts, one of which is crossed, to the shaft, whose motion is to be constantly in the same direction.

No. 53,313.—DANIEL S. LOY, Gracehan, Md.—*Tuyere.*—March 20, 1866.—This invention consists of a flange or wing, which projects laterally from the raised nozzle, its upper edge being on a level with the surface of the tuyere, the object being to form a guide for the shovel when used to remove the cinders, &c.

Claim.—The combination with the removable plate D of the raised muzzle E, and guide plate G, substantially as and for the purpose described.

No. 53,314.—M. P. MACK, Canandaigua, N. Y.—*Piston Valve.*—March 20, 1866.—This invention consists in a hollow or tubular valve, which is of sufficient length to cover the ports upon both ends of the cylinder, in combination with the seats in which it works and the steam ports leading to the cylinder. The valve is constructed in the form of a spool, having a piston on each of its ends, with its central portion reduced so as to form an annular space for the escape of the exhaust steam. It also has a passage through its centre from end to end for the passage of the steam from the boiler into the cylinder, and which allows the pressure to be equalized on both ends of the valve, thus making it a balanced piston valve.

Claim.—The tubular valve D, with two heads *b b'*, in combination with the seats *c c'*, in the valve chamber ports *a a'*, leading to the cylinder A, and with the steam and exhaust pipe, all constructed and operating substantially as and for the purpose described.

No. 53,315.—DAVID J. MARTIN, Covington, Ohio.—*Tuyere.*—March 20, 1866.—The peculiarity of this tuyere consists in forming in the top or cap plate of the air chamber one central hole of large diameter, and surrounding the diameter with eight smaller holes. On this cap plate rests another plate, which may be rotated by a hand lever, and which is pierced with eight holes, four of which being over the large central opening in the plate beneath, communicate directly with the air chamber, while the other marginal holes may or may not be brought to register with those of the plate beneath, as may be desired.

Claim.—In forges, the combination of the blast pipe G, the air chamber A, with a top perforated as shown, and the perforated rotating disk B, substantially as above described.

No. 53,316.—DAVID F. MASNATA, New York, N. Y.—*Revolving Screw Steamship.*—March 20, 1866.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—An improved helicoidal or revolving screw steamship, consisting of an interior stationary cylinder, of an exterior revolving cylinder, having hollow or chambered screw threads formed on its exterior surface, and of an exterior gallery, the whole being constructed and combined substantially as herein described and for the purposes set forth.

No. 53,317.—JAMES A. MATTHEWS, St. Louis, Mo.—*Railway Track Clearer.*—March 20, 1866.—This invention consists of a device to be attached to railway cars, to remove snow and dirt from the rails, and is composed of a shoe held in position by means of springs, yielding to obstructions, and regulated by a set screw.

Claim.—The spring A, bent or curved and applied to the car, substantially as shown, in combination with the scraper C, stirrup E, set screw F, and bar D, and all arranged substantially as and for the purpose set forth.

No. 53,318.—SILAS B. MAULSBY, Muncie, Ind.—*Evaporator.*—March 20, 1866.—This invention consists of an evaporating pan, divided into two equal parts by a partition, through which passes a shaft, around which the pan revolves. Either part of the pan may be brought over the furnace as desired by this means. The pans are made with corrugated bottoms, and at the end of each pan nearest the partition is a box communicating with the fire-place, and with a flue passing through the opposite end of the pan by means of pipes. The said flue is so arranged that it communicates with a swinging flue when the pan is in place over the furnace. The flue communicates with the chimney. The pan is raised above the furnace when it is to be revolved, by means of a cam working against the bail attached to the sides of the pan.

Claim.—First, the combination of a revolving pan with a portable furnace, substantially as described and for the purpose set forth.

Second, the combination of the smoke and heat flues E with the pan and furnace, substantially as described and for the purpose set forth.

Third, the combination of the fluted bottom P with the pan and with the furnace, substantially as described and for the purpose set forth.

Fourth, the combination of the cam lever N with the pan, and with the vertical shaft, substantially as described and for the purpose set forth.

Fifth, the combination of the hinged horizontal pipe G with pan and smokestack, substantially as described and for the purpose set forth.

No. 53,319.—JOHN M. MAY, Janesville, Wis.—*Quartz Crusher.*—March 20, 1866.—This invention consists in so constructing the stamps, and the shafts that operate them, that they can be adjusted to always fall the same distance and with the same force, whether the quantity is more or less that is to be crushed by the fall.

Claim.—A quartz rock or other crusher, constructed substantially as described, so that the distance the stamp is raised above the substance to be crushed is adjustable, substantially as described, and that said distance as adjusted will be uniform, and produce a uniform force or blow upon a greater or less quantity of material to be crushed, substantially as described and set forth.

No. 53,320.—JOSIAH MCFARLAND, Clinton, Ill.—*Lamp Shade.*—March 20, 1866.—This invention consists in so constructing the frame and the shade as to allow a space for the free circulation of air above the flame and around the chimney.

Claim.—In lamp shades, leaving a space or spaces about the ring which receives the chimney of a lamp, in order to allow a free circulation of air, substantially as and for the purpose above described.

No. 53,321.—HENRY L. MESERVEY, Boston, Mass.—*Wash-board.*—March 20, 1866.—This invention consists in making a wash-board of a flexible or elastic surface, stuffed with curled hair.

Claim.—The combination of the flexible covering with an elastic stuffing or filling, substantially as described and for the purpose set forth.

No. 53,322.—THOMAS H. MINER and SAMUEL HEAVENRIDGE, Greenfield, Ind.—*Cultivator Plough.*—March 20, 1866.—This invention will be understood by reference to the claims and engravings.

Claim.—First, the sliding plates D D, with the plough standards F passing through them, and the plates connected to the crank I of a shaft J, by rods *e e*, said shaft having a cross bar K at its rear end provided with stirrups L, and all arranged to operate in the manner substantially as shown, to give a lateral movement to the ploughs.

Second, the connecting of the plough standards F to cranks *g*, on the plates D D, by rods *f*, the cranks having levers N attached, and all arranged substantially as shown, to admit of the raising of the ploughs.

No. 53,323.—DAVID P. MYERS, Salem, Ill.—*Broom-head.*—March 20, 1866.—This invention consists in forming a head of one piece of sheet metal, the metal folding over at the sides after the handle and the corn is inserted, so as to form a complete casing of metal.

Claim.—The combination of the corrugated clasp A, and overlapping sides *a*, of the form herein shown, clasp bars C, nuts and bolts B, and handle D, constructed and arranged in the manner and for the purpose herein specified.

No. 53,324.—ISAAC NATHAN, New Haven, Conn.—*Dress Elevators.*—March 20, 1866.—In this invention, at suitable elevations within the skirt, two rows of linen tags are sewed to the dress, each having an eyelet inserted in it. A piece of wire bent so that its ends meet, and held in this manner by a spring, is suspended from each upper eyelet, and the lower eyelet is raised and suspended from it when it is desired to lift the dress.

Claim.—The combination of the hook A and pieces of fabrics B and C, when constructed so as to be attached to the skirt, as and for the purpose specified.

No. 53,325.—D. M. Nichols, New York, N. Y.—*Tool for Cutting off Boiler Tubes.*—March 20, 1866.—This invention consists in arranging upon a shaft a sleeve having several slots cut nearly through it longitudinally, alternately from one end to the other. On the said shaft, about midway, is a stationary round, wedged upon the end, a movable one operated by a rod running through the shaft in its axis. Between these two wedges the sleeve is placed, and then inserted in the tube, when the said movable wedge is drawn towards the stationary one expanding the sleeve, so as to hold the shaft firmly in the tube; the outer end of the shaft forms an axis upon which is a cutter head, clamping tools for dressing off the ends of the tubes.

Claim.—First, the shaft A, provided with a suitable expanding or centring device, in combination with the cutter C, and suitable feeding device, all constructed and operating substantially as and for the purpose set forth.

Second, the expanding sleeve B, in combination with the stationary and shifting cones, and with the tightening screw *b* and shaft A, constructed and operating substantially as and for the purpose described.

No. 53 326.—D. J. Noble, New Boston, Ill.—*Cultivator.*—March 20, 1866.—This invention consists in the application to the pivoted plough standards of springs to restore them to their normal position after being pressed laterally by the feet of the driver.

Claim.—The springs F, applied to the pivoted plough standards *b*, substantially as and for the purpose set forth.

No. 53,327.—John K. O'Neil, Kingston, N. Y.—*Weighing Scoop.*—March 20, 1866.—In this invention the scoop, or ladle, is suspended at its sides to a bail, at the arch of which a spring balance is attached by its lower end, in such a manner that by swinging the bail and balance to a horizontal position the balance may be latched by a spring bolt to the rear end of the scoop, and thus serve for a handle. The scoop being filled with the article to be weighed, the balance is unlatched and swung up to a perpendicular position, and the weight of the article may be ascertained in the usual manner.

Claim.—A scoop, or ladle, provided with a balance, or equivalent weighing device B, arranged so as to weigh any substance or article in the scoop, substantially as herein specified.

No. 53,328.—Lewis M. Patterson, Jordan's Grove, Ill.—*Gang Plough.*—March 20, 1866.—This invention consists in keeping the plough level, or in a horizontal plane, when the axle has an inclined position in consequence of one wheel running in a furrow and the other upon the unploughed land, or when the machine is operating upon uneven ground; the adjustment necessary to effect this being accomplished by means of a lever.

Claim.—First, the combination of the two frames F H, one, F, being attached by a pivot bolt or screw to the pivoted bolster C, and the other, H, attached to the front end of F by a hinge or joint, and having a lever, J, connected to it, substantially as shown, for the purpose of keeping the frame H, and consequently the ploughs, in an elevated or working position, substantially as set forth.

Second, the bolster C pivoted to the axle A, in combination with the frames F H and the lever N, or its equivalent, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 53,329.—James J. Peck, Deansville, N. Y.—*Seat for Vehicles.*—March 20, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, the pendent bars D D, attached to the front part of the base *a* of the seat C, and provided with hooks *b* at their lower ends, in combination with the bars B B, fitted longitudinally in the body, A, of the wagon, and grooved at their under sides as shown at *c*, substantially as and for the purpose set forth.

Second, attaching the top of a vehicle to its seat through the medium of a frame E, arranged as shown, or in an equivalent way, so that the frame may be held in a horizontal position above the back and sides of the seat, or thrown back to the rear of the seat, for the purpose specified.

No. 53,330.—John Pelsor, Brooklyn, Ill.—*Hand Loom.*—March 20, 1866.—In this invention the treadle frame and batten are so connected by a cord to a stiff spring above the loom as to assist the operator in "beating up" by the forward stroke of the batten. By means of levers connecting with the slide which lifts the heddles, the same movement of the batten gives a downward motion to said slide, and a backward motion of the batten gives reverse motions respectively to the treadle and slide. The bar on the picker staff, by being pivoted, is permitted to remain in a right line with the face of the batten, and thus to prevent the wearing off of the cords which operate the pickers.

Claim.—First, the arrangement of the spring *s*, or its equivalent, with the treadle frame and batten, and arm V, for assisting the beating stroke of the batten, substantially as specified and shown.

Second, the arrangement of the lever S with the slide U, arm V, and batten E, operating as set forth and described.

Third, providing the picker staff with the pivoted bar K, as and for the purposes set forth and shown.

Fourth, supporting the warp roller B in bearings having a separate horizontal adjustability, substantially in the manner and for the purposes set forth and shown.

No. 53,331.—RUFUS S. PICKETT, New Haven, Conn.—*Fastening for Garments.*—March 20, 1866.—In this invention a loop is formed by making five bends in the wire, thus affording two legs to be sewed to the cloth, and two rear loops to constitute a spring, and a front central loop through which the button is to pass edgewise, and in which its shank is to be embraced.

Claim.—A metallic button catch when constructed and fitted for use, substantially as herein described and set forth.

No. 53,332.—I. C. PLUMER, Boston, Mass.—*Hoe.*—March 20, 1866.—This invention consists in a hoe which shall have an adjustable and removable blade, so arranged in reference to the handle that it will admit of a variation of its inclination to the handle, and of its being permanently secured at any desired plane relative to the handle, and so that the hoe can be adjusted to the various inclinations of the surface of the earth, or the height of the person using it; also, to admit of easy and ready removal of the blade from the handle for sharpening and other purposes.

Claim.—In the construction of hoes the arrangement of the shank within the socket as described, the former operated and secured substantially as set forth.

No. 53,333.—E. H. PORTER, New Britain, Conn.—*Swivel Button.*—March 20, 1866; antedated March 9, 1866.—In this invention the button consists of a thumb screw, or key-shaped head, and a stem, a disk to move loosely on the stem, a head being struck up on the stem, and the disk being perforated for sewing to the garment. The disk is sewed to one edge of the garment, and the head passes through the button hole on the other edge, when in line with said button hole, and retains the edges together when transverse thereto.

Claim.—A swivel button made as herein described as a new article of manufacture.

No. 53,334.—A. D. PUFFER, Somerville, Mass.—*Mosquito Guard.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—In combination with the deep frame *a b*, and covering *c*, the narrow fringe or edging *d*, the whole forming a mosquito guard for the face, substantially as described.

No. 53,335.—JOHN RANKIN, New York, N. Y.—*Churn.*—March 20, 1866.—This invention will be understood from the claims.

Claim.—First, the employment of a dasher having its paddles or beaters constructed and arranged in the manner specified—that is to say, with all except one set to screw or feed the cream toward one end of the box, and one set at said end to screw or feed in a reverse direction, as hereinbefore set forth.

Second, the main driving gear *m*, pinion *l*, pulley K, fan pulley I, and belt J, the whole combined and arranged to operate in the manner specified.

Third, the employment of a blower arranged within the case of the churn, and in conjunction with induction holes 1 2 3 4, substantially as and for the purposes set forth.

Fourth, the employment of the double-screw dash, constructed in the manner specified, in combination with the blower and air escape *e*, when the said blower is located at one end and the exit *e* at the other end of the box, the whole operating in the manner and for the purposes set forth.

No. 53,336.—DAN READ and JOHN F. GALLEY, New York, N. Y.—*Composition for Coating Iron.*—March 20, 1866; antedated March 6, 1866.—This invention consists of a composition of one pound of gutta-percha, three pounds of asphaltum, and one pound of shellac. These ingredients are melted together and incorporated, and when the composition is required for use it is dissolved in benzole.

Claim.—A manufacture or composition for coating the surfaces of iron or other metal, and of wood and other materials, compounded of gutta-percha, asphaltum, and shellac, or the residuum of coal tar, or the equivalent of either, combined with a compound of gutta-percha, prepared for vulcanization, or its equivalent, in substantially the manner and for the purposes herein specified.

No. 53,337.—JOSHUA REGESTER, Baltimore, Md.—*Try-Cocks for Steam Generators.*—March 20, 1866.—This invention consists of a try-cock so constructed as to be less liable to derangement by use, and so arranged as to direct the steam or heated water in a steam generator issuing from the cock in a downward direction; it also consists in a combination of a vent stem, try-cock, and a lever valve stem.

Claim.—The combination of the vent stem A of the try-cock, and the lever valve stem B *g*, all constructed, arranged and operating substantially as described for the purpose set forth.

No. 53,338.—LEOPOLD REINAUER, Cincinnati, Ohio —*Machine for Preparing Oval Frames for Gilding* —March 20, 1866.—The nature of this invention will be understood by reference to the claim and engraving; it does not admit of a brief description.

Claim.—First, the imperforate eccentrically revolving bed H, in combination with the scraper O connected by arm P and swivel joint Q to a fixed object outside of said bed.

Second, the elevated annular rest N, upon a gilder's preparing bed, rotated eccentrically as set forth.

Third, the vertical shaft B armed with a driver L, which traverses and rotates a bed H having the described or equivalent connection with a stationary eccentric circular track.

Fourth, the described combination of the elements A A′ B C D E F H I I′ I″ I‴ J and L, or their equivalents, for producing the desired adjustable elliptical movement of the bed.

Fifth, the devices D E F *a c* M *m* for fixing the circular track C to any specific eccentricity.

No. 53,339.—GEORGE L. REYNOLDS, Newburg, N. Y.—*Fastening for Blinds and Windows.*—March 20, 1866.—This invention consists in a sill plate combined with a catch extending from the blind, and with a latch on the window, the sill plate holding the blind catch, whether the window is open or shut, or locking the window when the blind is closed or thrown back, and when both window and blinds are closed the parts are locked together so securely that they cannot be opened without breaking, except from the inside.

Claim.—First, the combination of the sill plate *f* and catch bar *d*, constructed and applied as and for the purposes specified.

Second, the combination of the sill plate *f* and spring latch *g*, as and for the purposes set forth.

Third, the combination of the sill plate *f*, spring latch *g*, and catch bar *d*, the parts being constructed and operating as set forth.

No. 53,340.—JOHN REYNOLDS, San Francisco, Cal.—*Process for Refining Bullion.*—March 20, 1866.—This invention consists in a method of reducing crude bullion in bars as it comes from the assayers, or in any other shape, to a fineness which, in gold, varies from 9.92 to 9.945, and in silver from 9.95 to 9.98, without the necessity of melting, and alloying, and granulating.

Claim.—The improved method of refining gold and silver bullion in bars, bricks, or any other shape, whereby the necessity of melting and alloying with copper, and granulating before refining, is obviated, substantially as described and for the purposes set forth.

No. 53,341—THOMAS E. RICHARDS, New York, N. Y.—*Self-stopping Pulley* —March 20, 1866.—This invention consists in the arrangement of one or more projections in the circumference of a pulley, and a suitable recess in the cap or case, which forms the bearings of said pulley, in such manner that when the cord which passes over the pulley is drawn over the edge thereof, it is caught between one of the projections and the recess of the case, and the pulley is stopped.

Claim.—The arrangement of one or more stops *d* projecting from the circumference of the pulley A in combination with one or more recesses *e*, in the case B, constructed and operating substantially as and for the purpose described.

No. 53,342.—DANIEL F. ROBINSON, Boston, Mass.—*Bottle-stopper Fastener.*—March 20, 1866.—This invention consists of a wire passing around the neck of a bottle, the ends being fastened together and formed into a hook, which passes through the eye in the wire. The wire passes over the cork, the end being bent in a hook, which catches under the wire.

Claim.—The improved bottle-stopper fastening made as above described.

No. 53,343.—EDWARD ROBINSON, New York, N. Y.—*Portable Water Closet.*—March 20, 1866.—This invention consists principally in the guide pieces, connected with the tongues or tongs, stop and lever; also, in the arrangement of the draw-rod, and slot in the same, connecting with the lever, and stench trap for facilitating the removal of the soil-container for cleansing.

Claim.—First, the arrangement of the guide pieces J J and stop K, when in connection with the tongs I I, and the slot T, and lever U, operating and for the purpose substantially as herein shown and described.

Second, the construction and arrangement of the draw-rod M provided with the slot T, and passing through the cover H, and connecting with the lever U, and stench-trap lever N, operating and for the purpose substantially as herein shown and described.

No. 53,344.—MARCUS M. ROBINSON, Dangola, Ill.—*Gauge Cock for Steam Generators.*—March 20, 1866 —This invention consists in the combination of an adjustable scale, index hand, float, arm, valve, and gauge cock.

Claim.—The combination of the gauge cock A, valve *b*, arm B, float C, index hand D, and adjustable scale E, substantially as and for the purpose specified.

No. 53,345.—SEYMOUR ROGERS, Pittsburg, Penn.—*Horse Hay Fork.*—March 20, 1866.—This invention consists in making the case of two parts, joined in any suitable manner at their lower ends to form the point.

Claim.—Making the sheath or case of the hay-elevator of two side-pieces, of any desired shape, united at the lower end by welding or otherwise, substantially as described.

No. 53,346.—JOHN ROMANS, Collamer, Penn.—*Sheep Rack.*—March 20, 1866.—This invention consists in so arranging the hopper that it can be converted into a roof, and in pivoting or hinging the troughs so that they may be folded up, securing their contents from storms.

Claim.—First, pivoting or hinging the sides B B of the hopper so that the same may be converted into a roof for protecting the troughs against snow and rain, substantially as specified.

Second, hinging or pivoting the troughs A A, so that they may be thrown or folded up, substantially as set forth and for the purposes described.

No. 53,347.—GEORGE F. SCHAFFER, New York, N. Y.—*Dental Impression Cups.*—March 20, 1866.—In this invention the cup is formed at its bottom in sections, which are separately fastened to the lower edges of the rim and arch, so as to be easily removable in whole or in part.

Claim.—First, in dental impression cups making their bottoms in sections or separate pieces so secured to the other parts of the cups as to be removable at pleasure, substantially as and for the purpose above set forth.

Second, the bars D D, for connecting the arch C and the rim F to each other, substantially as and for the purpose above set forth.

No. 53,348.—ANDREW J. RUNYAN, Ashland, Ind.—*Medicine Composition*—March 20, 1866.—This invention consists of a decoction of Indian hemp, hops, and lobelia, mixed with whiskey, sugar, and essence of cinnamon, as an expectorant.

Claim.—The composition of an expectorant from the ingredients compounded and prepared substantially as set forth.

No. 53,349.—L. F. SCHANCK, Holmdel, N. J.—*Potato Digger.*—March 20, 1866.—This invention consists in the combination of a share and screen, so operated as to have a lateral vibratory motion and be capable of vertical adjustment.

Claim.—First, the share and screen attached by a standard R to a bar Q operated from the axle D, substantially as shown and described, to give a lateral vibratory motion to the share and screen, as set forth.

Second, the adjustable roller G, in combination with the share and screen, and arranged relatively therewith, to operate as set forth.

Third, the placing of the share S in front of the axle D to admit of the vertical adjustment of the share, substantially as described.

Fourth, the spring catch U applied to the frame A, in combination with the bevelled rear end *i* of the draught pole, substantially as and for the purpose specified.

No. 53,350.—JULIUS SCHOTTENFELS, New York, N. Y.—*Manner of Operating Shuttles in Looms.*—March 20, 1866.—This invention is intended for that class of looms in which narrow goods are woven. The spring dogs are for arresting the rising and falling shuttle frame in correct position for the proper action of the shuttles, and the spring friction stops are to support the overhanging part of the shuttle from dropping.

Claim.—First, the carrier D which travels in suitable guide ways in the batten of a loom where the same is used, in combination with a rising and falling shuttle frame C, carrying two or more shuttles, one above the other, and arranged to move up and down independently of the batten and carrier, substantially as and for the purpose set forth.

Second, in a loom having a rising and falling frame carrying a plurality of shuttle boxes and their shuttles, driving each of the shuttles as desired by means of a single reciprocating rack, which actuates a single reciprocating driver for all the shuttles, as described.

Third, the notched spring dogs *l*, or their equivalents, in combination with the rising and falling frame C carrying two or more shuttles, one above the other, and with a carrier D, constructed and operating substantially as and for the purpose set forth.

Fourth, the friction stops *d'*, in combination with the rising and falling frame C, carrying two or more shuttles one above the other, and with the carrier D and batten A, constructed and operating substantially as and for the purpose described.

No. 53,351.—FRANZIS SCHWEIZER, New York, N. Y.—*Bolt-heading Machine.*—March 20, 1866.—The nature of this invention will be understood by reference to the claims and engraving.

Claim.—First, the arrangement of the swedge hammer *f*, in combination with two springs *h i*, and treadle *j*, constructed and operating substantially as and for the purpose described.

Second, the tilting platform G, in combination with the gauge *g*, tongs *s*, and shears F, constructed and operating substantially as and for the purpose set forth.

Third, the compound or triple cam v' constructed and operating in combination with the sleeve s' and hammer r', substantially as and for the purpose set forth.

Fourth, the funnel o', made in two parts, which open and close by the action of suitable springs and cams, in combination with the carrying tongs f' and socket n', constructed and operating substantially as and for the purpose described.

Fifth, the stationary anvil a^3 and movable die b^3, both V-shaped, or in any other suitable form, in combination with a spring e^3, intended to force the head of the bolt or rivet out of the anvil a^3, substantially as and for the purpose set forth.

Sixth, the movable spring tongs d^3, in combination with the anvil a^3, and hammer die b^3, constructed and operating substantially as and for the purpose described.

Seventh, the reversing fingers h^3, in combination with the tongs d^3, anvil a^3, and punch b^3, constructed and operating substantially as and for the purpose set forth.

Eighth, adjusting the gripe of the reversing fingers by a spring fulcrum fx, or other equivalent means, substantially as described, so that the same will grip bolts or rivets of any desired size.

Ninth, the files m^3, operated by a suitable cam n^3, in combination with the clamping jaws k^3, constructed and operating substantially as and for the purpose set forth.

Tenth, the milling tool o^3 arranged on a rising and falling and laterally oscillating spindle p^3, to which an intermittent revolving motion is imparted by bevel wheels s^3 u^3, or other equivalent means, substantially as and for the purpose described.

Eleventh, the compound three-way carriage H, in combination with one or more rising and falling slides and tongs constructed and operating substantially as and for the purpose set forth.

Twelfth, the levers k' and yoke m', in combination with the tongs, and a' f' g', constructed and operating substantially as and for the purpose described.

Thirteenth, giving to the standards I K a swivel motion by means substantially such as herein described, or any equivalent means, for the purpose set forth.

Fourteenth, the self-adjusting stop i^3 in combination with the swivel post K, constructed and operating substantially as and for the purpose described.

No. 53,352.—JOHN C. SCRIBNER, Holderness, N. H.—*Churn.* —March 20, 1866.—This invention consists in the construction of the dasher, the peculiar action of which upon the cream gives it a centrifugal movement, and causes the same to impinge against breakers, where it is directed into the space between the auxiliary ridges and dasher, and up through the said dasher. It also consists in the construction of the auxiliary ridges in the bottom of the churn tub, whereby more or less agitation of the cream is provided, thus facilitating the operation of churning.

Claim.—The combination as well as the arrangement of the dasher annulus g and its wings k, with the spiral or curved ledge b, and the inclined wing or cleat e applied to the bottom and inner curved surface of the tub, substantially as specified.

Also, the combination as well as the arrangement of series of auxiliary radial ridges f f f with the curved ridge b, the inclined cleat c, and the annular dasher provided with wings, arranged as specified.

Also, the combination of the sliding annulus s and semi-tubular bearing t, as made and applied together and to the bail, as specified.

No. 53,353.—EARL HARRY SMITH, Sherwood, N. J.—*Sewing Machine* —March 20, 1866; antedated September 20, 1865.—In this invention the needle and shuttle are driven by cranks directly. The forward and fastest movement of the shuttle takes place when the crank pin which drives the shuttle lever is nearest the fulcrum; the reciprocation of the mechanism which drives the shuttle and the needle are such as to counterbalance and so neutralize the tendency to vibration. All the primary actuating devices for all the motions are brought into a compact group, and excepting the needle arm, are attached to a single piece of casting.

Claim.—First, the employment of an eccentric or its equivalent, to actuate the needle with the uniform motion ordinarily due to a crank or eccentric, in combination with a revolving wrist and oscillating lever operating together and actuating the shuttle, the arrangement of the shuttle with respect to the motions of said wrist and lever being substantially as specified

Second, the arrangement and combination of the eccentric and strap, wrist and lever, as specified, whereby such parts and the motions thereof act as a counterbalance to each other, for the purposes and substantially as described.

Third, constructing the shuttle-race with a hanger cast therewith, provided with a boss receiving and forming the bearing for the driving shaft, and supporting the feed-bar and shuttle-driving lever, substantially as specified.

No. 53,354.—J. C. SPOONER, Springfield, Mass.—*Porcelain and Card Album.*—March 20, 1866.—This invention will be understood by reference to the claims and engravings.

Claim.—First, arranging card photographs, porcelain and other similar pictures, in a closed case, constructed with transparent covered openings, as described, in such a manner as that they may be concealed or exhibited by being moved from the outside of the case, substantially as herein set forth.

Second, the device for holding and moving these pictures, consisting of the shoe *b* having the projection E attached, passing through the bottom of the case and working in a slot therein, substantially as herein described.

Third, arranging the door D, at the rear end of the case, for the purpose of closing the opening formed for the insertion of the pictures, substantially as herein set forth.

No. 53,355.—FRANCIS STABLER, Baltimore, Md.—*Apparatus for Packing Animal and Vegetable Substances.*—March 20, 1866.—This invention consists of a vessel which may be hermetically closed by means of any suitable cover. The vessel is connected with a gas generator by means of a pipe provided with a suitable cock for opening and cutting off communication between the two vessels, and with a water tank also provided with a cock. The cans are placed in the vessel, one side of the lid being held in the groove and the other resting on a movable bar. The lid is then placed on the vessel and the cock is opened, and a quantity of water allowed to escape from the vessel so as to produce a vacuum in the vessel. The gas is then let on from the vessel, and any acid that may be contained in the vessel is allowed to escape through a cock in the cover. When the cans are entirely surrounded by an atmosphere of carbonic acid gas, the bar is drawn from under the lid and the cans may be removed and sealed.

Claim.—The combination of a receptacle in which a vacuum as above described may be produced, containing cans of animal or vegetable food from which the atmospheric air is to be abstracted and carbonic acid or other gas incapable of supporting combustion, put in its place with the water cylinder, or any other means of producing a vacuum in the receptacle, and a gas generator, the whole operated substantially as described.

Also, the combination of a receptacle substantially as described, for the purposes described, with a gas generator, where the gas is forced into the receptacle.

Also, the combination of a vacuum receptacle, containing the cans of food to be preserved, with a frame supporting in part the lids of the cans, and the rod operated from the outside to drop the lids, substantially as described.

No. 53,356.—GEORGE STIMPSON, Jr., New York, N. Y.—*Manufacture of Pens.*—March 20, 1866.—This invention consists of a pen corrugated in its transverse section, or provided with ears projecting upward close above or in line with the inner end of the slot, for the purpose of increasing the power, elasticity, and durability of the pen.

Claim.—A pen of metal or other suitable material provided with side wings *a*, projecting upward, substantially as described, as a new article of manufacture.

No. 53,357.—WILLIAM J. STOWELL, Baltimore, Md.—*Railway Switch.*—March 20, 1866.—This invention will be understood by reference to the claims and engravings.

Claim.—First, the construction of the switch rail C′ with an enlarged head *b* and a projecting inclined plane *c*, in combination with the guide C^2 having a depressed flange support on it, and arranged substantially as described.

Second, in combination with the pivoted rail C^2, and rail C, and a flange support *g*, a device applied to the switch rail C′ which will elevate the car wheels from the main track rail and cause them to pass over on to the switch rail when the switch is in a line with the siding, substantially as described.

No. 53,358.—H. P. STRAUB, Cincinnati, Ohio.—*Grinding Mill.*—March 20, 1866.—This invention consists, in a grinding mill, of a series of nuts and tram bolts, with a bridge tree suspended at both ends, in such manner that the runner stone may be adjusted horizontally, the fixed stone then set free, so that it may rest squarely against the face of the runner stone, and then again fastened and retained by jam nuts on a true level with the runner stone, which may then be lowered to the proper position for grinding, without changing the relative true levels of the two grinding faces.

Claim.—First, the combination in a grinding mill of the suspended bridge-tree nuts *d g*, and the jam nuts *e* on the tram bolts S, said bridge tree being suspended at both ends, substantially as and for the purpose described.

Second, the arrangement of the tram bolts S and adjusting nuts *d g*, in combination with the plate *b*, for adjusting the stone E perfectly with the horizontal face of the stone D, substantially as described.

No. 53,359.—AUGUSTUS H. TAIT and JOSEPH W. AVIS, New York, N. Y.—*Distilling Apparatus.*—March 20, 1866.—This invention consists of a series of retorts set horizontally alongside of each other, the said retorts being connected together by zigzag pipes. The vapor arising from the oil in the several retorts is carried off by means of a current of steam or compressed gas passing through the condenser, where the heavy and light oils are separated.

Claim.—First, the arrangement of a series of retorts R′.... R^{xii} set horizontally alongside of each other over and across the fire flue, with the breadth of the fire grate nearly equal to the length of the retorts, the furnace being placed at one, and the chimney at the other, end of the series, substantially as and for the purposes set forth.

Second, the use of an impelled current of steam or suitable gas, in combination with the series of retorts R′.... R^{xii}, substantially as specified, whereby the vapors are expelled from said retorts, and at the same time the heavy vapors of the last retorts are caused to mingle intimately with the light vapors of the first retorts, for the purposes described.

Third, the condensers C D provided with condensing coils C′ D′, and applied in combination with each other and with the retorts R′ R″.... R^{xii}, substantially in the manner and for the purposes set forth.

Fourth, tapping the condensing coils C′ or D′ at different levels, substantially as and for the purposes described.

Fifth, the coking retorts R^{xiii} R^{xiv}, two or more, applied in combination with the retorts R′ R″.... R^{xii}, substantially as and for the purpose specified.

No. 53,360.—G. C. Thomas, Brooklyn, N. Y.—*Baggage Check.*—March 20, 1866.—This invention will be understood by reference to the claim.

Claim.—The baggage check described, consisting of two or more disks furnished with suitable openings and inscriptions, which, together with the strap D, indicate either the place from which the baggage comes, and to which it should go, or only the place to which it should go, in the manner herein above set forth, or in any manner substantially the same.

No. 53,361.—J. B. Thompson, New York, N. Y.—*Apparatus for Desiccating Eggs, &c.*—March 20, 1866.—This invention consists of a box, through which passes a revolving shaft provided with arms, to which are attached buckets; under the said shaft is a trough, and a current of heated air is caused to pass through the box by means of a fan.

Claim.—The general arrangement of the apparatus herein described, the same consisting in the use of a series of buckets or pans attached to a common revolving shaft, and moving in and through the substance or substances to be desiccated placed in the trough or receptacle therefor, in combination with any suitable device or devices for generating a current or currents of heated air through the chamber in which the buckets revolve, substantially as and for the purpose specified.

Also, the combination of the revolving buckets B B and trough or receptacle D, arranged together substantially in the manner described and for the purpose specified.

No. 53,362.—Stephen Timmins, Philadelphia, Penn.—*Tinman's Furnace.*—March 20, 1866.—This invention consists in the arrangement of a tube around the opening through which the soldering iron is presented to the fire, which projects far enough inward to prevent the fire from acting directly upon the front casing of the furnace, as in ordinary furnaces, and is therefore less liable to burn out.

Claim.—The combination with a tinman's furnace of a tube D extending through the opening in which the soldering irons are placed into the interior of the furnace, substantially as and for the purpose described.

No. 53,363.—Daniel J. Tittle, Albany, N. Y.—*Potato Digger.*—March 20, 1866.—This invention consists in a cylinder of revolving digging forks, deriving their motion from the wheels of the machine, and acting to raise the potatoes and throw them over upon an inclined grate, over which they roll, and are freed from the earth previous to passing into the receptacle.

Claim.—First, the revolving digging cylinder constructed substantially as specified, in combination with the swinging frame *k l* and lever *m* for connecting or disconnecting the digger from its operative mechanism, as set forth.

Second, the side plates *r′* fitted to the revolving digging cylinder, as and for the purposes specified.

Third, the revolving digging cylinder *h* actuated in the manner set forth, in combination with the grate *q* and receptacle *r* sustained by the frame *k′* and *c*, as set forth.

Fourth, two or more shafts *d* connected rigidly to the frame, in combination with the digging cylinder actuated as set forth, and the sustaining wheels, so that the digging cylinder is sustained by the shafts to the horses, when said cylinder is raised, as set forth.

No. 53,364.—Albert W. Upton, Lowell, Mass.—*Knob Latch.*—March 20, 1866.—In this invention the latch is operated by imparting to the knob arbor an endwise movement, a shoulder upon the latter being forced thereby against the inclined wall of a slot in the bolt, through which the arbor passes. Each knob is divided transversely in two parts, the inner portion of each embracing the door, the outer portion being so far separated from them as to allow the requisite movement of the arbor.

Claim.—The combination of the inclined heel C on the latch A, the shoulder *d* on the arbor E. the slotted sleeve *f*, pin *x*, and the divided knobs, the whole arranged substantially as and for the purpose specified.

No. 53,365.—William Warner, Philadelphia, Penn., assignor to himself, H. McIlvain, J. L. Warner and George C. Sharp.—*Car Brake.*—March 20, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, the use of the coil springs E, in combination with the axles B, by means of the cylinders D, when arranged and operating substantially in the manner hereinbefore described.

Second, combining the springs E with the frames F and pulling bars G, substantially as and for the purpose set forth.

No. 53,366.—W. H. WATROUS, Hartford, Conn.—*Door Bell.*—March 20, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The bent lever C fitted loosely on the bell pin B, provided with long and short arms *a a'*, connected respectively with the pull-wire E and the loop F, in connection with the lever C and the spiral spring G fitted on pin *c*, and connected to or forward with the loop F and hammer rod K, all arranged to operate substantially as and for the purpose set forth.

No. 53,367.—JOSEPH H. WEBSTER, St. Louis, Mo.—*Steam Boiler Furnace.*—March 20, 1866.—In this invention the smoke pipe is so arranged, in connection with an elbow from the front part of the boiler, that a passage is made for the products of combustion back into the fire chamber, from near the top of the boiler; a small pipe conveys steam into the return flue, discharging it nearly at its mouth in the fire chamber, in order to create a draft.

Claim.—The construction and arrangement of smoke flue A and steam pipe *a*, in combination with breeching B and fire box C, substantially in the manner and for the purpose herein set forth.

No. 53,368.—CHARLES S. WELLS and L. H. MAYOTT, Springfield, Mass.—*Drill Chuck.*—March 20, 1866.—In this invention the jaws of the chuck are pivoted to the face of the stock, with their outer ends projecting through holes in a ring, which turns upon the said stock, the turning of which opens or closes the inner ends of the jaws; a jam nut screws up to the ring and holds it firmly in place.

Claim.—The device herein described, when used substantially in the manner and for the purpose herein set forth.

No. 53,369.—HENRY WERNTZ, Pine Grove, Penn.—*Car-brake Shoe.*—March 20, 1866.—This invention consists in attaching shoes to car brakes by means of a metallic socket with dovetail and side flanges, combined with a latch and hanging-latch holder.

Claim.—The metallic socket B formed with the dovetail flanges *b* at each end, and the lips *c* at one side, in combination with a suitable catch or latch D, and the shoe C, notched so as to fit into the socket, all being applied to the hanger A, substantially as and for the purpose herein set forth.

No. 53,370.—MARTIN WILLIAMS, Charleston Four Corners, N. Y.—*Threshing and Winnowing Machine.*—March 20, 1866.—This invention consists in pivoting and suspending the inner or vibrating frame to uprights attached to the main frame, which receives the motion from the fan shaft whereby the loose grain is thoroughly separated from the straw and both discharged from the machine at different points. It also consists in the use of a metallic plate for preventing the straw from getting between the slats of the conveyor, and which serves as a deflector for deflecting the straw upward so that it will have a position parallel with the conveyor, thus insuring a free discharge of the straw and all choking or clogging of the parts prevented.

Claim.—First, supporting the frame E upon pivoted uprights F F, in connection with the straps G G at the outer end of said frame, and operating the frame by means of a pitman and crank from the shaft of the fan C, all arranged substantially as and for the purpose set forth.

Second, attaching the swinging pendants L to the case A by means of straps *d* and keys or wedges *e*, substantially as and for the purpose specified.

Third, the plate Q applied to the lower end of the conveyer P, substantially as and for the purpose set forth.

No. 53,371.—WM. BENCH, assignor to himself and GEORGE BENCH, Auburn, N. Y.—*Attaching Seats to the Beds of Vehicles.*—March 20, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—A device for adjustably securing the seats to the beds of wagons and other vehicles at any desired point by the stress of a lever, hinged, secured and connected substantially in the manner set forth.

No. 53,372.—JOHN DANBY, assignor to JAMES GROWER, New York, N. Y.—*Machine for Weaving a Covering for Cords.*—March 20, 1866.—In this invention two filling thread carriers travel in a circular groove and a series of weft thread carriers travel in radial grooves which cross the circular one, thus opening and closing the shed. When a weft thread breaks the machine stops automatically, thus: the weight or slide which it has held up drops, allowing a projection thereon to come in contact with an arm and unlatch the weighted lever, whose upper arm in rising lifts the cog wheel out of gear with the driving gear.

Claim.—First, the crescent-shaped shoes E E employed in combination with the two pairs of cam grooves *g g'*, arranged to corresponding distances on opposite sides of the centre *c*, for forming the sheds in the manner described.

Second, the radial slide *v*, formed with a triangular or oblique head in combination with the pin *u*, sleeve *t*, handle *s*, weighted lever *p*, and loose pinion *m*, all constructed and arranged to operate as and for the purpose specified.

No. 53,373.—JAMES E. HALLETT, assignor to EDWARD H. JONES and CHARLES W. NOYES, Greenbush, N. Y.—*Oscillating Pump.*—March 20, 1866.—In this invention a horizontal cylinder has a piston extending its whole length and through its widest diameter. The said piston has two oblique channels nearly transverse to each other. In the reciprocating movement of this piston it alternately opens and closes an eduction valve set at a suitable angle to receive the pressure of said piston on one side, and open to the vacuum created by the opposite side, two eduction valves in corresponding positions above communicate with a common delivery.

Claim.—First, providing holes or openings *a a*, arranged diagonally or nearly so with each other, and passing through the axis of oscillation of a plunger B, as shown and described, the said holes communicating with vacuum or receiving chambers *g h*, for the purpose described.

Second, in combination with the above the cylinder A, partitions *c* c^2, and valves *b* b^1, the whole operating in the manner and for the purpose substantially as set forth.

Third, fitting the packing *f f* into grooves and extending the same or permitting it to overlap the edges of the metal when used in combination with the plunger B and partitions *c* c^2, as described.

No. 53,374.—ANSON HATCH, assignor to himself and JOHN PARKER LINDSAY, New Haven, Conn.—*Lathe.*—March 20, 1866.—This invention consists in the combination of an index wheel, screw, and scale upon the tail stock to move it out of line for turning tapers and to indicate the amount of inclination of the stock.

Claim.—The index wheel C in combination with a screw as *a* and a graduated scale as *c*, when the whole is constructed and arranged and fitted to produce the result substantially as herein described.

No. 53,375.—LORENZO MARQUES, New York, N. Y., assignor to J. J. REBON and J. M. MUNOZ, same place.—*Musical Instrument.*—March 20, 1866 —This invention consists in an arrangement of the teeth upon the cylinder of a music box whereby they can be thrown into or out of the plane of the ordinary comb of such a box, and the cylinder thus adapted to play any tune within its scope; also, in the arrangement of a key-board in connection with the cylinder in such manner that the setting of its teeeth can be easily accomplished by simply depressing the proper keys at the proper time.

Claim.—First, so arranging or hanging the teeth upon the cylinder of a music organ or box that they can be either turned up or down, substantially in the manner and for the purpose described.

Second, in combination with the above, so arranging a series of keys in connection with the teeth of the cylinder that by depressing any one or more of the keys, the teeth corresponding thereto upon the said cylinder will be turned up thereby, the number of which teeth so turned up being regulated by the length of rotation imparted to the cylinder while such keys are depressed, substantially as described and for the purpose specified.

No. 53,376.—W. J. F. LIDDELL, Erie, Penn., assignor to himself and JOHN P. ONDERDONK, Buffalo, N. Y.—*Car Spring.*—March 20, 1866.—This invention consists of a U-shaped spring with ends bent inward and upward in such a manner in combination with semicircular blocks resting upon their ends as to automatically afford increased resistance to increase of weight.

Claim.—A torsional spring for railroad cars constructed or bent in double or U-form with the ends *b b* bent inward or toward each other and inclined upward and applied in pairs to the truck, substantially as set forth.

Also, the semicircular blocks I I attached to the plate or bar H in combination with the springs F F, substantially as and for the purpose specified.

Also, the springs F F, semicircular blocks I I, and the blocks or bearings E E E', all combined and arranged to operate substantially as and for the purpose set forth.

No. 53,377.—BENJAMIN OWEN, assignor to himself and JOHN OWEN, Dayton, Ohio.—*Cotton Seed Planter.*—March 20, 1866; antedated February 28, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—First, the arrangement of the cog gear *a b c m* with reference to the driving wheel F and its shaft E, the frame A, and the toothed wheels *a' a' b'*, substantially as described and for the purpose specified.

Second, the piece *n* arranged with reference to the frame A, bolt I, arm J, stay *i*, substantially as and for the purpose specified

Third, the toothed wheels *a' a' b'* operating and arranged substantially as described with reference to the hopper B and slide D.

Fourth, the slide D constructed and arranged with reference to the opening in the hopper B and to the wheel *b'*, substantially as described and for the purpose specified.

No. 53,378.—J. M. RANDLE, Brighton, Ill., assignor to himself and J. W. HILL, same place.—*Horse Power.*—March 20, 1866.—This invention consists of a horse power so made that it can be unshipped by an operator at some distance from it, as at the top of a load of hay in the case of a hay derrick.

Claim.—The combination of the wheel C^1, arm C^2, lever C^3, and journal B with the post E, clutch ring E^1, lever E^2, and ropes D and E^4, when constructed and arranged as and for the purpose set forth.

No. 53,379.—JAMES, AMOS W. and WM. H. SANGSTER, assignors to themselves, HUGH SANGSTER and THOMAS J. CONROY, Buffalo, N. Y.—*Manufacture of Ink.*—March 20, 1866.—This invention consists of a composition of oil, rosin, soap, and finely pulverized bituminous coal.

Claim.—A new and useful discovery of a combination of pulverized mineral coal with rosin soap and oil or other equivalent, and the production thereby of a cheap compound to be used as ink for printing.

No. 53,380.—JOSIAH W. SEFTON assignor to himself and JAMES MCCREARY, Gettysburg, Penn.—*Churn.*—March 20, 1866.—This invention consists of a pair of reciprocating dasher shafts, each carrying a pair of perforated and pivoted dashers, which, by oscillating and vertical movements of the dasher shaft, are caused to rock as they alternately rise and fall in the churn, being guided in their motion by a cleat which keeps them from interfering.

Claim.—The arrangement of the pivoted dashers H H', the dasher shafts F F, and the double crank shaft C E E, the whole operating substantially as described and represented.

No. 53,381.—AMOS SHIPLEY, Newark, N. J., assignor to W. T. and J. MERSEREAU, New York, N. Y.—*Stair Rod.*—March 20, 1866.—This invention consists in constructing a stair rod partly of wood and partly of metal, the metal covering the wood and being ornamented with any device.

Claim.—Combining wood and metal in the manufacture of stair rods, substantially as described for the purposes specified.

No. 53,382.—HENRY C. SISCO, assignor to himself and OSGOOD & SMITH, Indianapolis, Ind.—*Lathes for Turning Wagon Hubs.*—March 20, 1866.—This invention consists in arranging a series of chisels in a frame to be operated upon by levers that force them in contact with the block being turned, in such a way that the hub is turned to the exact size and shape desired, as well as cut to the proper length.

Claim.—First, the movable frame P with the band chisels Q Q, cutting off chisels R R R R, levers S S T S S, and weighted lever Z thereto attached, when constructed, arranged, and operated substantially in the manner and for the purpose set forth.

Second, the movable frame P and chisels and levers attached thereto, in combination with the roughing off chisels and countersinking chisel, when arranged and operated in the manner and for the purpose substantially as set forth.

No. 53,383.—JAMES STRATTON, Philadelphia, Penn., assignor to himself, G. G. EVANS, Philadelphia, Penn., and D. W. RIDDLE, Manchester, N. H.—*Hydrocarbon Burner.*—March 20, 1866.—This invention consists in a supply pipe arranged to descend within a hollow flame surrounding said pipe.

Claim.—The supply pipe B, when arranged as herein described, to descend within the hollow flame produced by a burner, E, surrounding said supply pipe.

No. 53,384.—SAMUEL THOMSON, GEORGE SMITH, and JOHN S. JENNINGS, Brooklyn, N. Y., assignors by mesne assignment, to JOHN PFEIFER, Philadelphia, Penn.—*Coal Hod.*—March 20, 1866.—This invention consists in making the bottom of hods of one piece of sheet metal swaged in the proper shape and joined to a flange on the body of the hod by rivets.

Claim.—The above described complete stamped or pressed coal hod bottom, as a new article of manufacture, for the purpose set forth.

No. 53,385.—BENOIST ROUQUAYROL, Paris, France.—*Apparatus for Supplying a Continuous Flow of Air.*—March 20, 1866.—In this invention a reservoir of compressed air is combined with an air chamber and pumps for supplying the same. The air chamber is provided with a plate or lid of less diameter than itself, on which is an elastic material which connects it with the sides of the chamber, and thus forms a second chamber over the sides of the former, the two communicating by a valve which is opened by a rod when pressure is exerted on the plate, thus allowing the air to pass out.

Claim.—The air chamber provided with what I call an air box or air boxes, the parts of which are arranged and combined as hereinbefore described, and this, whether a single air box be used, as in figure 4, or two air boxes in combination for obtaining a regular outflow, as in figures 1 and 2.

No. 53,386.—HENRY THORNTON, Nottingham, England.—*Knitting Machine*—March 20, 1866.—In this machine the power is applied to a crank, the pitman connects the crank to a sliding frame, the latter carrying the thread guide, and also the devices for successively operating the needles of each row, those of one row crossing those of the other at an acute angle. Both sides of the machine are alike.

Claim.—The arrangement of the jack trucks D D, the double inclined openings *r r*, and the thread carrier *n* upon a single sliding frame or carriage, the centres of the jack trucks and the centre or eye *v* of the thread carrier working in the same perpendicular plane parallel to the axes B, substantially as herein shown and described.

No. 53,387.—EDWARD OBERLANDER, HENRY WEISS, and ERNEST BAGNICKI, New York, N. Y.—*Composition Paint.*—March 20, 1866—This invention consists of a composition made by dissolving from eighteen to twenty ounces of shellac in one hundred ounces of water, holding in solution from one to six ounces of borax. To this composition may be added one-fourth of an ounce of gum-arabic and three scruples of white sugar. The composition thus formed may be mixed with the ordinary colors to form paint.

Claim.—As a new article of manufacture the above described paint, composed of the materials and quantities substantially as set forth and prepared in the manner also described.

No. 53,388.—HIRAM BERDAN, assignor to the BREDAN FIRE-ARMS MANUFACTURING COMPANY, New York, N. Y.—*Priming Metallic Cartridges.*—March 20, 1866.—This invention consists in the application of a small cup, in shape like a percussion cap, inverted and inserted into the centre of the base of a metallic cartridge, said cup having a small inward projection on its base, against which the fulminate is ignited by means of a hammer or striker. The fulminate or priming is applied to said cup by means of a small metallic primer or pellet and the powder is ignited through an aperture in said cup.

Claim.—The fixed permanent teat-like projection *s* at the bottom of the cup N in the head of a cartridge, in combination with the pellet or other priming inserted into and protected within the said cup, substantially as herein set forth.

No. 53,389.—JOHN W. ALLEN, Newark, N. J.—*Hinge.*—March 27, 1866.—This invention consists in pivoting two leaves of a hinge together in the usual manner around the lower butt; and projecting therefrom in a horizontal plane is formed a circular-shaped shoulder-plate or disk, which plate extends entirely around the butt. In this shoulder-plate and through its entire thickness are cut two similar radial notches; a latch lever hung by its arm at one of its ends to and upon the outside face of the swinging leaf, along which it extends, passing through a fixed guide or clasp of the same, and engages at its other end with either of the two notches of the fixed butt, according as the hinge is either opened or closed.

Claim.—The construction and arrangement of the notched hinge butt *l* latch lever *r*, with its knob or handle *u*, and the guide or clasp *t*, of the swinging leaf, when combined and operating as and for the purpose specified.

No. 53,390.—MARTIN AMES.—New Ipswich, N. H.—*Stopper for Ink Bottles.*—March 27, 1866.—Connected with a collar surrounding the top of the inkstand is a fixed catch, which engages in a hole of a flange on the inside of the cap. On the top of the neck of the bottle is a stopper which is pressed by a spring within the cap. On the hinge of the cap is a pintle, on which is fitted a spiral spring, which tends to keep the eye in contact with one of the bearings of the hinge.

Claim.—The fixed catch B, connected with the collar *a*, in combination with the lid or cap C, provided with an internal flange *c*, having a hole *d* in it, or any other equivalent means for the catch B to engage with, and also provided with a pressure stopper *c*, said lid or cap being connected with the collar *a* by a hinge *b*, arranged with a spring *j*, to admit of a lateral movement or adjustment of the lid or cap, substantially as and for the purpose set forth.

No. 53,391.—B. F. BARKER, San Francisco, Cal.—*Door Spring.*—March 27, 1866.—This invention consists in inserting in a suitable recess in the top rail of a door a spiral spring, which is operated by an arm attached to a bracket, the latter being secured to the posts or jamb of a doorway, whereby a perfectly working spring for closing a door is obtained.

Claim.—The combination of the spiral spring C, pivoted arm E, bracket F, groove *b*, and recess *c*, when constructed, arranged, and employed in the manner and for the purposes specified.

No. 53,392.—C. F. A. Bander, Newark, N. J.—*Vegetable Cutter.*—March 27, 1866.—This invention consists of a sheet of metal cut with inclined slots, the edges of each being turned slightly upward and sharpened so as to form cutting edges on both sides of the sheet of metal.

Claim.—A vegetable cutter made of a piece of sheet metal A, which is slotted so as to form a series of strips *b*, with double cutting edges, substantially in the manner herein set forth.

No. 53,393.—D. C. Baughman, Fort Seneca, Ohio.—*Head Block for Saw-mills.*—March 27, 1866.—This invention consists of a removable gear wheel operating upon the shaft that carries the pinions which gear into the racks, and has two sets of teeth, so that the pawl can be worked in either set in order to set the log to the saw, to cut different thicknesses of timber.

Claim.—The application to the shaft D of a ratchet gauge wheel K, having upon its circumference two sets of teeth varying in number, in combination with the lever G and reversible pawl *j*, substantially as described.

No. 53,394.—Julius S. Benedict, Bedford, Ohio.—*Fence Gate.*—March 27, 1866.—From the middle post to the upper end of the end post extends an inclined strip. To one of the posts is attached a centre pin or hinge composed of two pieces. To another of the posts is fastened a cleat to prevent the gate from being raised by cattle, the cleat striking against a friction roller if the gate is raised.

Claim.—The strip B′, hinge or centre pin E, and roller *b*, in combination with the gate, when arranged in the manner and for the purposes set forth.

No. 53,395.—Benjamin Best, Dayton, Ohio.—*Filter.*—March 27, 1866.—This invention consists in a compartment to which is added a cold-water vessel, into which the filtered water is emptied. The said compartment has in its lower half a small vessel, in the bottom of which is a strainer, filled with or arranged to receive a sponge or like filtering material, and communicating with a chamber surrounding the vessel into which the water passes. In the top of the vessel there is also a strainer filled with filtering material, and which extends upward into a sand box placed in the top of the compartment. In the lower part of the surrounding chamber there is also a third strainer with filtering material in it, and communicating the water into the cold-water vessel, out of which it is drawn by a cock.

Claim.—The combination of the sand box D and filtering box C, provided with sponge tubes *a* and *c*, with the vessels A and B, substantially as described.

No. 53,396.—Henry P. M. Birkinbine, Philadelphia, Penn.—*Valve for Pumps.*—March 27, 1866.—This invention relates to an improvement in pump valves, whereby a large flow is permitted with but slight motion of the valve, and noise and concussion is diminished by a water cushion, formed between the valve and its seat. The valve has two concentric faces attached by arms to a central sleeve which slides upon a guiding pin. The valve seat has two corresponding faces, the inner one forming the edge of a bowl or cup, through the bottom and centre of which passes the guiding pin. At the bottom of the bowl and around the guiding pin is a projection, to which corresponds a groove in the end of the valve sleeve, and with which, when the valve is seated, the groove is nearly in contact, thus forming, with the water engaged between them, a cushion, for the purpose above indicated.

Claim.—First, the valves and valve seats of a pump so constructed as to form a water cushion, substantially in the manner and for the purpose set forth.

Second, the combination of the double-faced valve F F′ with the valve G, having cups for forming a water cushion, the whole being constructed and arranged substantially as and for the purposes set forth.

Third, the arrangement of the valves G, seats F, stems H H′ H″, and yoke I, all constructed and combined substantially as and for the purposes set forth.

No. 53,397.—W. W. Branch, Jr., Madison, Ohio.—*Protracting Bevel.*—March 27, 1866.—In this invention the bevel stock is pivoted to the protractor, at the centre of the circle of which its curved edge is an arc, and has an oblong slot, divided longitudinally by a small metallic strip, which serves as an index to the graduated arc beneath.

Claim.—The combination of the protractor *a*, margin edges *b b*, extension blades C, stock D, and index E, arranged and operating in the manner and for the purpose herein specified.

No. 53,398.—James L. Branson, Cincinnati, Ohio.—*Hand Loom.*—March 27, 1866.—The object of this invention is to keep open the shred longer than usual, and thus save power as well as entanglement or breaking of the warp or filling, and also to insure making a better and tighter selvage.

Claim.—First, the combination of sleeve H, provided with the inclines or cams on its end, ratchet wheel *i*, pinion G, and wheel C′, provided with the pawl *h*, arranged to operate as and for the purpose set forth.

Second, the sleeve H, provided with the cams on its end, as described, in combination with the sliding rod K and cam I, arranged to operate substantially as herein shown and described.

Third, the cam I, constructed as shown and described, and arranged to move laterally on the shaft C, in combination with the treadles *k*, whereby one cam is made to operate all the treadles, and also to keep the treadle depressed during nearly the entire revolution of the cam, as and for the purpose set forth.

Fourth, the combination and arrangement of shaft *n*, provided with the crank *c* and wheel *b*, with a shaft *d*, provided with the wheels *b'* and *e*, when arranged to operate in connection with wheel *f* on the shaft C, as shown and described, for the purpose of enabling the attendant to stand facing her work.

No. 53,399.—GEORGE B. BRAYTON, Boston, Mass.—*Steam Generator.*—March 27, 1866.—This invention consists of a series of compartments connected together at their tops and bottoms, so as to allow a circulation of water and steam. Each compartment has its interior space broken by transverse partitions.

Claim.—A steam generating apparatus composed of compartments constructed and arranged substantially as described.

Also, the use of a vessel for the generation of steam made with openings *a a a*, and partitions surrounding the same, substantially as described for the purposes specified.

No. 53,400.—D. C. BREED, Lyndonville, N. Y.—*Machine for Boring Hubs*—March 27, 1866.—This invention consists in an arrangement of devices whereby the wheel is adjusted to an annular plate, so as to bring the hub centrally in the direction of the cutter or borer, also in the devices for adjusting the cutter mandrel to cut the hole in the proper direction and taper.

Claim.—The combination and arrangement of the annular plate L, adjustable connecting plates *n n*, supporting arms J J', and adjusting screws M N, in connection with the spiral grooved chuck plate K and cog bars *m m*, substantially as herein specified, whereby the centralizing longitudinal and angular adjustments of the hub are effected together, as set forth.

Also, the combination of the adjustment of the cross-bar H by the longitudinal scale *x*, and the transverse adjustment of the mandrel bearing I by the scale *i*, with the adjustment of the chuck plates K L, to suit hubs of different lengths, for the purpose of directly determining the required taper of the holes to be bored in the hubs, substantially as herein described.

No. 53,401.—WILLIAM BEST, Newark, N. J.—*Machine for Ironing Hats.*—March 27, 1866.—In this invention the hat is blocked in position upon the centre of a circular table within a frame. Irons are suspended from a vertically adjustable frame above, a spring holding each iron to duty, and a central vertical wedge serving to adjust them horizontally to the size of the hat to be pressed. The irons are thus applied simultaneously to all parts of the hat at once, except the under side of the brim.

Claim.—First, the vertically sliding frame D, carrying the smoothing irons E F G, the said smoothing irons having a sliding movement with regard to the said frame and being arranged with reference to a rotary hat block, substantially as herein set forth for the purpose specified.

Second, the many-sided smoothing irons arranged in relation with a rotating hat block, substantially as set forth for the purpose specified.

Third, the inverted conical or taper block H, acting upon the bars *n''*, and sliding blocks *n*, to spread apart the smoothing irons, substantially as set forth.

Fourth, the sliding blocks *n*, and the bars *n'*, arranged with reference to the partitions *m''*, with their oblong vertical holes in such a way as to allow the smoothing irons a limited rocking movement, substantially as herein set forth for the purpose specified.

Fifth, the arrangement of the staples *v'* and slide *v*, for securing the hat block upon the table, substantially as herein set forth.

Sixth, the catch *b*, belt slipper *d''*, and table B, arranged with reference to each other and to the hat block and smoothing irons, substantially as set forth for the purpose specified.

Seventh, the clamp composed of two halves *q*, sliding in the base *t*, and operated by a screw *t'* when provided with a flange m^3, and used in connection with a rotating table and suitable smoothing irons, substantially as herein set forth for the purpose specified.

Eighth, the annular plate m^4, placed upon the flange m^3 of the clamp underneath the hat brim, when used in connection with suitable smoothing irons, substantially as herein set forth for the purpose specified.

Ninth, the elliptical plate or guide S^3, secured upon the hat block and guiding the iron F when smoothing the under side of the brim, substantially as herein set forth.

Tenth, the horizontal bars *m*, adjustable in the lower ends of vertical bars *m'*, arranged in relation to smoothing irons, substantially as herein set forth for the purpose specified.

Eleventh, the arrangement of the "luring" cloth on the end of an elastic bar or spring, attached to the same shaft as one of the smoothing irons, substantially as set forth for the purpose specified.

No. 53,402.—NELSON W. BREWER, Williamsport, Penn.—*Wooden Pin Machine.*—March 27, 1866.—This invention relates to a machine for making wooden pins, for joiners' use, from blocks cut to the length of the pin, and consists of a reciprocating cross-head having

indentations in its under side for pointing the pins, and, at the same time, forces the block upon dies that cut the pin; and, before the cross-head rises from forcing the pins into the dies, a set of followers raise the pins in the dies, and force the upper ends into the indentations for pointing when the cross-head rises to admit the block for the second cut, which forces the first pin out through the dies by reason of the followers having receded far enough to allow a guide apron or chute to spring under the dies and catch the pins and conduct them into a receiver.

Claim.—In combination with the stationary cutters, the vertically reciprocating block carrier for cutting off the pins from the wood and holding them ready for being pointed, substantially as herein described.

Also, in combination with the stationary cutters and reciprocating pointing tools, the travelling followers for forcing the pins against the pointing tools, substantially as and for the purpose described.

Also, in combination with the stationary cutters and reciprocating block carrier and followers, the vibrating guide board, which is moved aside by the followers as they are approaching the cutters, and returns after the followers are withdrawn to receive the finished pins and carry them out of the machine, substantially as described.

No. 53,403.—WILLIAM R. BROOKS, Boston, Mass.—*Wick Trimmer.*—March 27, 1866.—This invention consists in attaching the cutting knife of a wick trimmer directly to the operating lever, so as to dispense with guide ways and thus cheapen the construction.

Claim.—The combination of the frame *a b*, lever *c g*, spring *o*, and knife *h*, when said knife is attached directly to the lever, and all arranged to operate as and for the purposes herein specified.

No. 53,404.—T. H. BRYMER, New York, N. Y.—*Burner for Gas Stoves.*—March 27, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The box B, perforated at its sides as shown at *b*, and provided with the vertical tubes C, in combination with the button or deflector D, air opening *a** in the top of the box B, and the tube A, with or without the perforated dish G, all arranged substantially as and for the purpose herein set forth.

No. 53,405.—JAMES A. BUNCE, East Berlin, Conn.—*Lathe Chuck.*—March 27, 1866.—In this device the jaws are forced in and out by keys having inclined faces, which are dovetailed into the inclined outer faces of the jaws. The wedge is forced out or in longitudinally by means of a sleeve upon the stock of the chuck.

Claim.—The combination of the sliding bars C, with the jaws B, sheath D, and stock A, substantially in the manner as and for the purpose described.

No. 53,406.—BENAJAH J. BURNETT, Mount Vernon, N. Y.—*Ventilator for Hats.*—March 27, 1866.—In this invention a plate on the inner and another on the outside of the hat are held together by the screw, thus clamping the material of the hat, a portion of which is cut away; a channel entering at the periphery of the outer plate terminates at the periphery of the inner plate.

Claim.—First, a hat provided with a ventilator, consisting of the series of air-deflecting and conducting passages *a' g*, arranged with reference to each other, and projecting outwardly from and inwardly through the crown of the hat, substantially as set forth for the purpose specified.

Second, the ventilator, consisting of plates *a m h*, and flanges *d' b*, united by a screw *e*, whereby they are secured in the hat, substantially as herein specified.

No. 53,407.—ALEXANDER COLLINS CAMPBELL, Mount Morris, N. Y.—*Method of Treating Cholera.*—March 27, 1866.—This invention consists in the use of a composition of muriated tincture of iron, one ounce; quinine, five grains; and strychnia, one grain, as a preventive; and the same composition combined with laudanum, one ounce; tincture of cayenne pepper, one ounce; and pepperine three to five grains, in the early diarrhœal stage of the disease. In addition to the above composition calomel and morphine may be used, and a preparation of mercurial ointment and iodine may be applied to the region of the liver in the collapse stage; the serum of the blood is to be replaced by injecting artificial serum in the veins, and various parts of the body of the patient are to be subjected to the influence of oxygen gas, and when reaction takes place, the patient should be made to swallow small quantities of ice and mucilaginous drinks, and should be wrapped in sheets wrung from tepid water.

Claim.—First, the preventive medicine composed of the several ingredients, and in substantially the proportions as described, under the head of the first part of my method of treatment.

Second, the same compound with the addition of laudanum, tincture of cayenne pepper, and pepperine, in substantially the proportions described, as a remedy in the diarrhœal stages of cholera, as set forth.

Third, the external application, composed of unguentum hydrargyrum and iodine, in

combination with the internal remedies above named, in the diarrhœal stage of cholera, as described.

Fourth, injecting oxygen gas into the tissues of the body, through perforations made in the skin, for the purpose of vitalizing the sub-oxydized blood in the capillary vessels and small arteries and veins, and producing warmth of the surface, substantially as described.

Fifth, injecting oxygen gas into the tissues of the body in combination with the injection of artificial serum into the veins, for restoring the fluidity of the blood, and arterializing it in the small vessels remote from the heart and lungs, substantially as and for the purposes set forth.

Sixth, as a whole, the within described method of treating cholera, substantially as set forth.

No. 53,408.—James Canfield, Washington, Iowa, and Charles Hess, Lyons, Iowa.—*Cultivator.*—March 27, 1866.—This invention relates to that class of cultivators which stride over the rows, and are supported upon wheels, and it consists in an arrangement whereby the plough beams may be raised and lowered simultaneously, and the inner beams may be moved from side to side to conform to the crooks and irregularities in the rows when desired.

Claim.—First, the combination and arrangement of the inner beams F F, the slotted hangers H H, pivoted to the cross-bar C, and the regulating bar I, operating as and for the purposes described.

Second, the combination and arrangement of the plough beams E F, the hangers G H, the levers L L, cross-bar C, chains *a b*, arranged and operating as and for the purposes described.

No. 53,409.—J. M. Canfield, A. T. Still, and E. P. Wheeler, Lawrence, Kansas.—*Harvester.*—March 27, 1866.—This invention relates to the construction and arrangement of the gavelling cradle located at the inner or main frame end of the endless belt or apron upon which the grain falls as it is cut, and by which it is conveyed to said cradle.

Claim.—The arrangement of the grain receptacle D, the handle E, and standard F, when constructed and operated substantially as and for the purposes specified and shown.

No. 53,410.—John W. Carhart, Troy, New York.—*Balance Valve for Steam Engines.*—March 27, 1866.—The object of this invention is to so balance the steam pressure on the valve that it shall move freely irrespective of the increase and diminution of the pressure. The invention consists in a recess in the plug valve, and in the arrangement of the screw, yoke, set screw, and cross-bar, with the plug valve and shell.

Claim.—First, the recess *i* in the thin end of the plug valve A, constructed and operating substantially as and for the purpose described.

Second, the arrangement of the screw *m*, yoke *n*, set screw *r*, and cross-bar *q*, with the plug valve A, and shell B, constructed and operating substantially as and for the purpose set forth.

No. 53,411.—H. P. Castle, Ashtabula, Ohio.—*Water Drawer.*—March 27, 1866.—This invention consists of a clamp which surrounds the shaft, the clamp being pinned at one end to the crank, which end is forked so as to receive the other end of said clamp, and the pin by which the clamp is pivoted to the crank acts as a fulcrum, by which means in connection with the forked end of the crank the latter is tightened in raising the bucket, and by the reverse action of the crank the clamp is loosened around the shaft, allowing the bucket to descend without turning the crank.

Claim.—The clamp E, provided with an arm H and lug I, in combination with the shaft B, and forked crank, constructed and arranged as and for the purpose set forth.

No. 53,412.—L. W. Chase, Galion, Ohio.—*Window Blind.*—March 27, 1866.—This invention consists in connecting the slats of window blinds by means of crank arms and a single strip in combination with a stop latch.

Claim.—The arrangement of the handle *l*, single strip G, and crank arms *h*, in combination with the slats *b*, and tenons *c*, operating in the manner and for the purpose herein specified.

Also, the combination of the latch *m*, and strip *g*, in the manner and for the purpose herein specified.

No. 53,413.—H. Christian, New York, N. Y.—*Apparatus for Crimping Hair.*—March 27, 1866.—In this invention a rectangular metal box, having a corrugated face, is made hollow and provided with a suitable port for the reception of hot water; to this is hinged another portion which may be hollow and provided with counter corrugations. Both parts are provided with handles by which the hair is held between them until suitably crimped.

Claim.—A crimping apparatus adapted for use in connection with hot water as a medium of supplying heat to the surface or surfaces brought into contact with the hair, substantially as hereinbefore set forth.

No. 53,414.—Hiram Clark, Jordan, New York.—*Skate.*—March 27, 1866.—This invention consists in clamping the foot plate to the runner, by means of clips or braces, bars

extending laterally through the bottom of the posts and up diagonally to the foot plate, to which they are secured by screws, and the top of the post terminating within the foot plate.

Claim.—The post *p*, having a stud *d* at the top, to enter the foot plate B, and an opening at the bottom in combination with diagonal brace bars *b*, which are secured to the foot plate by screw or otherwise, substantially as and for the purposes set forth.

No. 53,415.—HARRISON COLE, Cincinnati, Ohio.—*Floor Attachment for Furniture.*—March 27, 1866.—This invention relates to a provision whereby desks and other articles of furniture can be firmly attached to a floor, and readily detached therefrom.

Claim.—The furniture floor fastening, consisting of the dovetailed tenons C C′, and sockets E E′, having one or more binding or locking tongues F, substantially as herein set forth.

No. 53,416.—MUNSON COLE, Colebrook, Conn.—*Straw Cutter.*—March 27, 1866.—In this machine the bottom board is made in the form of the letter U, or concave, to correspond with the shape of one of the knives, which is firmly attached to the end of the cutting box.

Claim.—The U or concave bottom of the receiving box, and my method of arranging the operating parts of the straw-cutting machine, as herein set forth.

No. 53,417.—JOHN J. COOPER, Olmsted, Ohio.—*Apparatus for Delivering and Receiving Mail Bags.*—March 27, 1866.—This invention consists in a device attached to a railway car for the purpose of receiving and delivering mail bags. The one at the station is placed in such a position as to be received between two of the projecting arms of this device, thereby coming in contact with a latch, causing certain springs to act upon the arms and clutch the bag, and at the same time releasing a hanger, to which is attached the bag to be delivered at the opposite end of this device.

Claim.—First, the arms A′ pivoted to the frame A, in combination with the catch B′ and spring *c*″, in the manner and for the purpose substantially as set forth.

Second, the arms A′ and hanger C, in combination with the springs *c* and *b*, substantially as and for the purpose described.

No. 53,418.—ELIAS COZAD, East Cleveland, Ohio.—*Fence.*—March 27, 1866.—This invention consists in constructing a fence with each post fixed in a stone, which stones are secured in the ground. Wires or rods extend across from post to post, each rod having spiral turns; in the edge of these posts are slots or notches in which the rods rest; these notches being cut downward, form a shoulder, and cannot be moved or pushed out of place very easily. The keys hold the rods in place to prevent their being raised or pushed up without first removing the key.

Claim.—The arrangement of wires or rods C with the spiral turns B′, in combination with the posts A, slots *a*, and keys *c*, in the manner and for the purpose set forth.

No. 53,419.—ELMER CRAWFORD and JAMES H. BIRCH, Burlington, N. J.—*Carriage Curtain Fastener.*—March 27, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The binding of the eyelets of carriage window curtains by means of metallic plates riveted together, held fast to the frame by hooking on revolving knob screws applied to and in combination with carriage window curtains, in the manner and for the purpose above set forth, using to obtain the said effect any metal, as brass, silver, galvanized iron, or any suitable material substantially equivalent or which will produce the intended effect.

No. 53,420.—JOHN J. DALY.—New Orleans, La.—*Instrument for Measuring Distances.*—March 27, 1866.—This invention depends upon the well known law of perspective, in that the apparent size of objects diminishes in regular gradation in proportion to their remoteness. It consists of a brass plate placed perpendicularly to a graduated rod, and provided with an opening which can be increased or diminished in size by a slide bar; on the side of the aperture scales are placed; the size of objects being known, their distance can be easily calculated by observing the space in the graduated aperture which they occupy; by shortening the radius by slides, the scale on the rod can be readily adapted to objects of any size.

Claim.—The arrangement of the scale A, index B, thumb screw D, and clamp screw E, in combination with the rod F, and eye piece G.

No. 53,421.—F. W. DEMBOIS, East Saginaw, Mich.—*Boiler for Culinary Purposes.*—March 27, 1866.—In this invention the cover has a curved upper surface and a rim all around, with holes or perforations at its lowest point, and provided with a tube or chimney at its centre.

Claim.—The combination with any vessel suitable for containing liquid to be boiled, of a cover B, consisting of the parts substantially as herein described.

No. 53,422.—J. A. DETAR, Lanesfield, Kansas.—*Adjuster for Evaporators.*—March 27, 1866.—This invention consists of a screw working in a cross-bar attached to the posts, the

said screw being secured to the bar, which is attached to the evaporator. The inclination of the evaporator may be adjusted by means of the screw, and the nuts attached to the stirrups.

Claim.—The frame, or its equivalent, with an adjusting screw depending therefrom and attached to the end of the rocker pan, substantially as and for the purpose described.

No. 53,423.—WARREN W. DUTCHER, Milford, Mass.—*Roller Temple for Looms.*—March 27, 1866.—In this invention the screw thread on the roller spindle is cut on its head, instead of its outer end, by which the liability to deflect out of line the cap and roller, while inserting the spindle, is avoided.

Claim.—Improved application or arrangement of the headed spindle and its fastening screw, with reference to the cap extension and the standard E for supporting the cap C, the spindle under such application being screwed into one, and being free to move lengthwise in the other of such parts at E, while the fastening screw is in the act of being set up, the whole being so that there may be no such force exerted by the spindle on the extension of the cap as will operate to draw the cap and spindle out of parallelism with the trough.

No. 53,424.—JOHN H. ECKERT, Lebanon, Ill.—*Gang Plough.*—March 27, 1866.—In this machine the plough beams are so arranged and connected by means of levers, rods, and braces, as indicated in the claim, as to allow the driver full control over the implement for temporary adjustment, both laterally and vertically.

Claim.—First, the arrangement of the plough beams E E, lever M, adjustable bars G*, adjustable guide H, rod F, screw rods G G, in combination with the standards J, rods K, sockets *f*, ploughs I, and braces L, constructed and operating in the manner and for the purpose herein specified.

Second, the combination of the lever N, cross-bar *o*, notched plate *p*, and frame C, constructed and arranged to operate in the manner and for the purpose herein specified.

No. 53,425.—W. R. ELDER and O. T. BAKER, Huntington, Ohio.—*Sheep Shearing Table.*—March 27, 1866.—Two crossed legs are pivoted together and support two bars, to which a sheet of canvas is attached. Between the crossed legs are braces, and under the canvas is a cord or strap provided with holes that loop over knobs on the legs and hold them in position, and also form a support for the canvas. The canvas is so attached to the bars as to form a hollow bed of sufficient depth to hold a sheep.

Claim.—The arrangement of the braces C′ C′ and D′ D′, in combination with the adjustable pivoted legs A B, straps *c*, and elastic holder D, constructed in the manner and for the purpose substantially as set forth.

No. 53,426 —ALFRED B. ELY, Newton, Mass.—*Telegraph Insulator.*—March 27, 1866.—This invention is designed as an improvement upon a previous patent granted to the same inventor, and it consists in attaching to a plain rubber-covered pin-hook a projecting rubber disk or rim of any proper shape at the lower part of the shank, and an open-mouthed bell or box above it on the shank and projecting down over the rim or disk, leaving a small space all around between the edges of the disk and the sides of the bell or box.

Claim.—The rubber bell and disk attached to the shank, in combination with the pin-hook, when constructed and arranged substantially as described.

Also, as articles of manufacture, the rubber bell, chambered pin-hooks, as described.

No. 53,427.—A. B. ELY, Newton, Mass.—*Telegraph Insulator.*—March 27, 1866.—In this invention the pin-hook with its attachment is made by fitting tightly to the rubber shank a disk of rubber projecting essentially at a right angle from the shank above the hook.

Claim.—As an article of manufacture, the rubber screw covered pin-hook, with rubber disk attached, as described.

No. 53,428.—OTTO ERNST, New York, N. Y.—*Cravat.*—March 27, 1866; antedated March 23, 1866 —In this invention a sheet-metal frame is provided with holes or an opening for attaching the bow, also a loop on the inner side to button over the shirt collar, from the front edge of the cravat frame in a curved shape, so as to set well beneath the chin.

Claim.—First, a sheet-metal frame for a cravat, formed with an opening or openings for attaching the bow at the front portion and retaining it in place, as specified.

Second, a loop or fastening on the inside of the sheet-metal frame of the cravat at the front part thereof, to connect the same to the shirt collar, as specified.

Third, forming the sheet-metal for the cravat frame with a curved edge at the part which comes below the chin, as and for the purpose specified.

Fourth, a cravat frame enamelled, or coated with a color to imitate a woven fabric on those portions of the frame that are visible when in use, as set forth.

No. 53,429.—HENRY D. FELTHOUSE and JOHN H. FELTHOUSE, Philadelphia, Penn.—*Egg Beater.*—March 27, 1866.—This invention consists in combining a series of stationary knives, with a vessel for containing the yolks of eggs, or other articles to be shaken.

Claim.—Constructing a series of beaters *c*, substantially as described, and combining them

with a closed vessel A, so that the eggs shall be cut up by shaking the vessel back and forth, the apparatus being constructed and operating substantially in the manner hereinbefore described and for the purposes specified.

No. 53,430.—SAMUEL T. FIELD, St. Louis, Mo.—*Telegraph Cable.*—March 27, 1866.—This invention consists of a cylindrical elastic cord, forming the core of the cable, around which is wound helicoidally one or more conducting wires. The whole is covered with a non-conducting yielding cover.

Claim.—The elastic cable composed of parts A and B, combined with the non-conducting and yielding cover D.

No. 53,431.—RANDALL FISH, Washington, D. C.—*Artificial Fuel.*—March 27, 1866.—This invention consists of a composition of 100 parts of coal dust, 12 parts of hydraulic cement, 12 parts of clean sand, 3 parts of flour, and 1 part of rosin, and sufficient water to bring the mass to the consistency of mortar. This composition is moulded into proper form in any suitable manner.

Claim.—A composition of matter for use as a fuel, compounded and prepared substantially in the manner set forth, from the ingredients named or their equivalents.

No. 53,432.—D. A. FISKE, Delavan, Wis.—*Churn.*—March 27, 1866.—This invention consists in suspending within the frame of the dasher two flaps having an inclined position when closed against the frame, one flap having an inclination reverse to that of the other. It also consists in the application to the lid of the churn of a chamber, which slides in and out between two bars affixed to the under side of the lid, for the purpose of preventing the escape of cream while in the act of churning.

Claim.—A churn dash provided with hinged or jointed flaps when the same are hung as shown, so as to have an inclined position when closed against the frame of the dash, and one flap having a reverse inclined position to that of the other, substantially as and for the purpose set forth.

Also the chamber H, applied to the under side of the lid or cover of the churn, substantially as and for the purpose set forth.

No. 53,433.—NATHANIEL W. FOYE, Cambridge, Mass.—*Scraper and Knife and Fork Cleaner.*—March 27, 1866.—This invention consists in the arrangement of a scraper having a flexible edge, in combination with a knife and fork cleaner of a flexible material.

Claim.—The within described implement, consisting of a scraper having one or more flexible edges, combined with a knife and fork cleaner, operating substantially as described.

No. 53,434.—JOHN B. FRAZIER and HOMER WICKES, Conneautville, Penn.—*Balance Beam for Boring Oil Wells.*—March 27, 1866.—On the end of the walking beam is an iron bar, upon which rests a sand or weight-box constructed in two parts, on one of which is bolted a strap of wood or metal. In the lower end of the strap is a slot and key to fasten the weight-box at any desired point on the walking beam. The weight-box rests upon rollers, to allow it to be easily moved or adjusted.

Claim.—The weight-box E F, with the straps G, key H, and rollers 1 and 2, in combination with the beam B C, constructed as described, and for the purposes set forth.

No. 53,435.—HENRY A. GASTON, Austin, Nevada.—*Amalgamator.*—March 27, 1866.—This invention consists of a pan supported on a stand, and having within it a short tube. In the centre of the pan is a hollow tube, through which a shaft passes, the said shaft being attached to a sleeve carrying a screw blade at its lower end, within the tube; the tube has apertures at its bottom.

Claim.—First, the rotating screw C, operating within the cylinder or case D, situated within the amalgamating pan B, substantially as herein described for the purpose specified.

Second, the inclined partitions *n*, arranged between the case D, and the amalgamating pan B, and with reference to the openings S, substantially as herein set forth for the purpose specified.

No. 53,436.—A. GIBSON, River Falls, and WILLIAM M. NEWCOMB, Clifton, Wis.—*Whiffletree.*—March 27, 1866.—The whiffletree is constructed with a metallic band or ferrule upon each end. The said ferrules are made with projections or lips upon the side next to the horse, and between these lips, and pivoted to them, is a bent lever, one arm of which extends parallel, or nearly so, with the body of the whiffletree, near the point where it is pivoted to the lips. The lever bends at a right angle and extends across the whiffletree, forming a U-shaped loop, through the ends of which passes a bolt or pin, and to this bolt or pin the tug or trace is hitched.

Claim.—The bands B, with the lips C, bent lever D, in combination with the pin H, spring *f*, or its equivalent rod K, and strap N, constructed substantially as and for the purpose specified.

No. 53,437.—WILLIAM GILBERT, Catskill, N. Y.—*Crate for Carrying Fruit.*—March 27, 1866.—This invention consists in a combination of slat-work frames, so constructed as to be easily folded up when emptied or not in use.

Claim.—The combination of front, rear, end, and bottom frames, formed and arranged as described, with a solid or framework top or lid, to form crates for the holding and carrying of fruits or vegetables or similar articles, in the manner as set forth in the within specification.

No. 53,438.—L. R. GLEASON, Dundee, N. Y.—*Evaporator.*—March 27, 1866.—This invention consists of a series of fluted tables, arranged one above the other, and supported by suitable framework. Above the upper table is a tank provided with cocks. The tables are so arranged that the liquid to be evaporated flows upon the upper table from the tank and down over each table until it is collected in the trough.

Claim.—First, the channelling of tables, which allows of using broad tables.

Second, the use of faucets to feed the brine upon the first table and to regulate the feeding according to the condition of the atmosphere.

Third, the depending points in combination with projecting ends of tables for directing the drip from one table to another correctly.

Fourth, the movable pins, or their equivalent, for the purpose specified.

No. 53,439.—HARMON GRAY, Sugar Creek, Wis.—*Garden Roller for Destroying Insects.*—March 27, 1866.—The object of this invention is to provide a machine which will readily follow the drills made by a seeding machine and pack the earth tightly about the seed, and at the same time pulverize the clods of earth so that bugs cannot enter the earth and lay eggs near the seed. Said machine will also pack the earth about the seeds and prevent the rapid escape of moisture from the surface of the soil.

Claim.—The guide wheel A′, scraper B, and ridged roller C, all constructed and arranged to operate substantially as described.

No. 53,440.—AMOS E. GRIFFITHS, Philadelphia, Penn.—*Furnace for Treating Auriferous Ores.*—March 27, 1866.—This invention consists of a furnace, situated over a tank containing water and having a hinged bottom opening downward, supported by a prop. The ores are supported on the bottom, and when thoroughly heated may be dropped into the tank below by knocking away the props. On the top of the furnace is a box provided with shelves attached alternately to each side of the box, upon which the particles of ore carried over in the fumes are collected. A pipe is connected with an exhaust fan, which communicates with a chimney containing blankets suspended below perforated pipes, through which a stream of water is made to flow. From the bottom of the chimney descends a pipe, having attached to it a series of pipes, which terminate over an amalgamating table or sluice box.

Claim.—First, the arrangement of a cupola immediately over a water cistern for the treatment of metal bearing minerals, substantially as set forth.

Second, in combination with a cupola C and chimney F, the reversed pipe D^2 and suction fan E, substantially as set forth.

Third, passing the fumes from heated metallic ores or mineral bearing metals over wet blankets or other porous substances, for the purpose of condensing such fumes and depositing the metals suspended in them.

Fourth, the arrangement of the chimney F, pipe G, branch pipes G^1 G^2 G^3 G^4 with the sluice boxes L and H, substantially as set forth.

No. 53,441.—JOHN GULLIFORD, Girard, Penn.—*Rack and Stove Shelf.*—March 27, 1866.—To the joint of a stove-pipe are attached four brackets, which extend upward and are fastened to a rack frame at the corners, and from these corners springs another bracket. A table or shelf, through which the pipe passes, is supported by it and the brackets, the latter being fastened to the under side of the shelf, by which means the pipe is firmly held in place. The object is to provide a means for hanging up or holding the various utensils used about a cooking stove.

Claim.—The rack frame H, brackets B E, in combination with the shelves H F and pipe A, arranged as and for the purpose substantially as set forth.

No. 53,442.—HUGH HAMILTON, Newburg, N. Y.—*Valve Gear for Steam Hammers.*—March 27, 1866.—This invention consists in the arrangement of a lever for operating the valves of the hammer in such a way that the force or effect of the blow given may be operated as desired. To effect this, one end of the lever which moves the valve is attached to the hammer, and the other end is made fast to the framework, and the rod which moves the valve is attached thereto, and thus the valve is operated by the motion imparted by the hammer. Attached to the above described lever is a hand lever, by which the movement of the valve can be controlled at any point of the stroke, and this can be effected independently of the motion of the hammer, thus constituting by this arrangement two valve motions, which may work conjointly or separately.

Claim.—The arrangement of levers L and N, in combination with link K and ram A for one, and with rod U U, lever W, and the slide valve for the other lever, which enables the blacksmith to work single acting and double acting steam hammers in the easiest possible manner, as described.

No. 53,443.—A. HAMMOND, Jacksonville, Ill.—*Gang Plough.*—March 27, 1866.—This invention is designed for providing and adjusting two supporting wheels simultaneously by means of a rack and screw, or their equivalents.

Claim.—First, providing for adjusting the two supporting wheels A and F simultaneously, by means of a rack and screw, or their equivalents. substantially as described.

Second, connecting the landside wheel F to a spring or yielding lever G, substantially as described.

Third, connecting the rear supporting wheel J to a spring or yielding lever H, substantially as described.

Fourth, providing for adjusting the spring *v'*, of the lever H, substantially as described.

Fifth, pivoting the axle bars of the rear supporting wheels F and J to oscillating segments, substantially as described.

No. 53,444.—CHARLES W. HARVEY, Buffalo, N. Y.—*Process of reducing refractory Gold, Silver, and Copper Ores.*—March 27, 1866.—The object of this invention is to reduce certain refractory ores, such as are found in various parts of California, and it consists in treating them in a blast furnace, in a manner similar to that pursued in the manufacture of pig iron.

Claim.—The reduction of refractory gold, silver, and copper ores in common blast furnaces, to the degree of obtaining pigs or bars of white metal therefrom, by combining and smelting therewith either the carbonate of lime, soda, muriate of soda, or other alkali or slag, substantially as described.

No. 53,445.—PAUL HILDRETH, Beloit, Wis.—*Cultivator.*—March 27, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The adjustable cultivator bars F F. the bed-pieces H H, the adjustable brackets W W, the movable gauges *e e*, and the scrapers *q q*, when constructed substantially as herein set forth and described, for the purpose specified.

No. 53,446.—CHARLES HOLMAN, Cameron, Ill.—*Cultivator.*—March 27, 1866.—This invention consists in arranging a spiral spring at the top end of the caster wheel standard, and securing the standard from turning by means of a button which fits into a recess in the top of the cross-bar, through which the standard passes, which keeps the caster wheels in proper position.

Claim.—The buttons H' H', secured to the upper ends of the rods G G, in combination with the bar J, provided with the recesses *h h*, and the springs *g*, on the rods G, all arranged substantially as and for the purpose specified.

No. 53,447.—GEORGE A. HOWE, Brooklyn, N. Y.—*Cotton Picker.*—March 27, 1866.—This invention consists in the manner of attaching the wings of a stripper to the shaft upon which they revolve.

Claim.—The arrangement of stripper fans in respect to the shaft on which they revolve as tangents thereto, substantially as described.

No. 53,448.—HARVEY HUNT, Oskaloosa, Iowa.—*Centrifugal Machine.*—March 27, 1866.—This invention consists in providing the ordinary centrifugal machine with a conical deflector, which projects the sirup in horizontal lines against any desired part of the screen.

Claim.—The construction of a centrifugal sugar separating screen, with a conical floor or deflector, substantially as and for the purpose set forth.

No. 53,449.—CHARLES HYDE, North Chelmsford, Mass.—*Flyer for Spinning Machinery.*—March 27, 1866.—The object of this invention is to avoid the necessity of weakening the flyer arm by drilling a hole in it to receive the ordinary guide wire, and, also, by means of the groove to prevent the arm from being worn by the yarn at the junction of the projection with such arm. The guide wire is removable, so that it may be supplied with a new one without the necessity of removing its socket.

Claim.—The combination of the projection B, socketed at its ends, with the flyer A and the wire or guard C, applied so as to extend either above or below, or both above and below the projection, as specified.

Also, the socketed projection as made with a groove *f*, going either wholly or partially around it, substantially as and for the purpose hereinbefore set forth.

No. 53,450.—J. H. JONES, Rockford, Ill.—*Harvester Rake.*—March 27, 1866.—An angular platform, or what is known as the "Manny platform," is employed, and is provided with an extension of its rear grain side corner, on which is mounted a hemispherical plate having an irregular, heart-shaped groove formed in it, in which the heel end of a swivelled rake post is caused to move by means of an inclined shaft which passes beneath the rear inner corner of the platform (over which the grain is moved in being discharged) and over the outer rear extension of said platform, and is connected to said rake post by an universal joint, as shown. The grain board or separator is armed with a forwardly inclined guard, which tends to throw the grain inward upon the platform, and is so arranged that the rake in its forward movement slides down said guard and outside of the grain on the platform.

Claim.—First, the combination of the turning and oscillating rake post, with the cam groove located upon the grain side of the main frame, when constructed, arranged, and operating substantially in the manner described for the purposes set forth.

Second, the combination of the platform, the divider, and the wing board with the rake, substantially as and for the purpose described.

Third, the arrangement of the platform, the driving shaft, and the rake, substantially for the purpose set forth.

Fourth, the combination of the driving shaft, the swivelling socket, the cam groove, and the rake, when arranged for joint operation, substantially as described.

Fifth, the combination of a rake post with a swivelling socket and a sliding fulcrum, substantially as and for the purpose described.

Sixth, the combination of the driving shaft, the swivelling socket, and the hemispherical cam groove, arranged and operating as described.

Seventh, the combination of the rake post, fulcrum pin, and guide socket, as and for the purpose described.

Eighth, uniting the rake post and arm, when located as described, at an acute angle, substantially as described for the purpose set forth.

No. 53,451.—JOEL F. KEELER, Pittsburg, Penn.—*Portable Tank for Oil, &c.*—March 27, 1866.—This invention consists in providing the closed tanks used for carrying oil in bulk with a hatchway or closely covered opening of sufficient size for the reception of ordinary freight; also, for a pipe with the admission of steam for cleaning said tank, and an outlet pipe for the escape of steam and impurities.

Claim.—First, the hatchway *h h'*, in combination with the steam pipe *d*, or their equivalents, in the construction and use of portable tanks.

Second, the hollow cover *f*, constructed and used substantially in the manner and for the purposes described.

No. 53,452.—ABRAHAM B. KING, Seven Mile, Ohio.—*Broom Head.*—March 27, 1866.—The shank of the broom passes through the centre of an abutment. An inner wooden clamp is provided with a flexible nut, for the purpose of bringing the necessary pressure to bear upon the clamp, and also to act as a washer to prevent the clamp from cutting off the heads of the corn. An exterior clamp is provided with a metallic nut, which engages with a screw-threaded portion of the shank.

Claim.—First, a broom head composed of a wooden abutment C, and one or more wooden clamps D and E, all arranged and operating substantially as described.

Second, the flange plates H *h h'* and I *i i'*, or their equivalents, in combination with the clamps D and E, as set forth.

No. 53,453.—JOSEPH KUNZ, Bay City, Mich.—*Sawing Machine.*—March 27, 1866.—This invention consists in the combination of a jointed frame support and the saw attached to a swinging frame, upon which is a box with weights, which assist in reciprocating the saw after it has been forced from the operator in making the cut.

Claim.—The arrangement of the saw *c*, adjustably pivoted to the swinging weighted frame *g*, which vibrates upon pivots in the supporting frame *m n*, substantially as described and represented.

No. 53,454.—LOUIS LANSZWEERT, San Francisco, Cal.—*Match Compound.*—March 27, 1866.—This invention consists of a composition of chlorate of potash, hyposulphate of lead, glass, gum, or cement, and bichromate of potash.

Claim.—The within-described match compound made of the ingredients above set forth, free from phosphorus and sulphur, substantially as specified.

No. 53,455.—CHARLES M. LEE, Springfield, Mass.—*Paper Shirt Bosom.*—March 27, 1866.—This invention consists in attaching an elastic loop, which is to fasten the bosom to the throat button of the shirt band, by the continuous series of stitching used to ornament and imitate plaits.

Claim.—The button-hole strip or loop *e*, when attached to the upper edge of the bosom by the continuous ornamental stitching upon the outer edges of the imitation plaits, substantially as and for the purpose set forth.

No. 53,456.—AUGUSTUS H. LOCHMAN, York, Penn.—*Heating Shade for Gas Burners and Lamps.*—March 27, 1866.—In this invention, within a shade, and fastened by springs, is a conical box terminating at its upper end in a chimney, and having a perforated and polished plate at its bottom immediately over the flame.

Claim.—The combination of a fixed or adjustable heater B, with a gas or lamp shade A, substantially as described.

Also, the construction of the hollow heater B B' *a* C, substantially as and for the purpose set forth.

No. 53,457.—Samuel M. Lockwood, Chicago, Ill.—*Sulky Plough.*—March 27, 1866.—This invention consists in the construction of the plough so as to admit of guiding the same, and adapting it to various kinds of work.

Claim.—The arrangement substantially as described of the part P, or its equivalent, in connection with the pole A, and the clamp D, or its equivalent, substantially as above described, by means of which a change of direction is obtained, substantially as set forth.

Second, the arrangement of the braces R and R, in manner substantially as set forth, with the corn ploughs or their equivalent, so that the same can be pointed as one may desire, in order to plough deeper or otherwise, as one may wish.

Third, the method of raising and lowering the ploughs by the arrangement of the levers J and J, in connection with the braces E and G, running from cross-bar to cross-bar, as above described, or their equivalent, substantially as above set forth, with the seat K, and in connection with the axle L, substantially as described, the cross-bar C, with the arms I and I, or their equivalent, in connection with the shanks M and M, substantially as set forth, and the cross-piece H, or its equivalent, substantially as set forth.

Fourth, the arrangement of corn ploughs in any and all of the ways substantially as set forth, in combination with a frame-work with wheels, and constructed substantially as set forth.

No. 53,458.—Philip Löffler, Milwaukie, Wis.—*Windmill.*—March 27, 1866.—This invention consists in the arrangement of a series of wings or paddles, of an oblong square in their shape, hinged on one edge, and placed on two arms transversely arranged, revolving upon their centres, having the wings or paddles placed on each side of the arm centres. To govern the wings or paddles, a guide rod is attached to the arms at the bottom of the wings or paddles, with projecting pins on said guide rod, the latter being turned and operated by an arm or lever to open the wings against a stop pin, and by a reverse motion of the guide rod allow the wings to close.

Claim.—The guide rod S having the stop pins O O, and operated by the lever arm L, constructed and operated as described and arranged in relation to the arms and paddles, substantially as set forth.

No. 53,459.—D. and D. F. Luse, Spring Mill, Penn.—*Corn Planter.*—March 27, 1866.—This invention consists in providing the bail with an attaching and adjusting flanch and angle-adjusting rod for mounting the drill tooth upon; also, in the double share and full double mould board furrow-clearing plough, in combination with the drill tooth.

Claim.—First, the bail L, provided with the attaching and adjusting flanch *t* and angle-adjusting rod M, for mounting the drill tooth upon, substantially as and for the purposes herein specified.

Second, the double share and full double mould board furrow-clearing plough N, in combination with the drill tooth I, substantially as and for the purposes herein set forth.

No. 53,460.—William B. Lupton, Pittsburg, Penn.—*Composition for Core Powder.*—March 27, 1866.—This invention consists of a composition, of clay one part, and coal-tar pitch two parts, in combination with sand.

Claim.—A compound made of the ingredients herein specified, to be used in combination with sand in the process of forming sand cores, as set forth.

No. 53,461.—J. MacDonough, New York, N. Y.—*Collapsible Float for Boats.*—March 27, 1866.—This invention relates to that class of floats which are constructed of flexible air and water-proof material, and capable of being folded up and collapsed into small space, and arranged with spring valves so that they may be attached to a boat.

Claim.—First, the combination and arrangement of the collapsible covering F, hoops A A, guard rope C, and valve D G, constructed and operating in the manner as herein described.

Second, the combination of the adjustable reversible brackets *m*, studs *a*, and floats F, arranged and operating as herein described.

Third, the combination of the collapsible floats F, hoops A, guard rope C, valve box D G, adjustable brackets *m*, studs *a*, string pieces B B, constructed and arranged relatively to each other and the boat P in the manner and for the purpose herein specified.

Fourth, the string pieces B B, in combination with the hoops A A and flexible covering F F, substantially in the manner and for the purpose specified.

No. 53,462.—D. Mackay, United States army.—*Men's Collars.*—March 27, 1866.—In this invention a collar frame is made of metal, hard rubber, or other suitable material, and covered with paper of any quality or color, by pasting the turned-over edges of the paper on the inside of the frame.

Claim.—A cemented covering adapted for application to the frame of a collar or analogous article of wearing apparel, substantially as set forth.

No. 53,463.—Alexander Mackey, New York, N. Y., and Eberhardt Müller, Williamsburg, N. Y.—*Centrifugal Machine.*—March 27, 1866.—This invention consists in the

employment of a circular partition within the revolving cylinder of a centrifugal machine, and composed, like the revolving cylinder, of wire gauze. This partition is stretched on the hoops, and strengthened by braces. It is kept in place by the platform, and secured to the bottom of the revolving cylinder, being held down upon said platform by an annular cover.

Claim.—First, the inner cylinder *m* applied to the main cylinder of a centrifugal machine, substantially as set forth for the purpose specified.

Second, the circular platform S and lid R, arranged with reference to the partition *m*, substantially as set forth for the purpose specified.

No. 53,464.—W. D. MAYFIELD, Ashley, Ill.—*Machine for Raking and Loading Hay.*—March 27, 1866.—This invention consists of two spring catch plates, which receive an arm attached to the rake, the arm being changed from one plate to the other by striking against a pin projecting from the frame.

Claim.—The manner of giving the up and down motion to the teeth of the rake H, to wit: by means of the pendent rod *l*, notched pivoted plates K K′, the projection *o*, and pin *p*, all arranged substantially as set forth.

No. 53,465.—CHARLES MCBURNEY, Roxbury, Mass.—*Manufacture of Dressing Rolls.*—March 27, 1866.—This invention consists in forming the rolls of a composition of twelve pounds of gum, twelve pounds of rubber rags, fifteen to twenty pounds of sulphur, four to six pounds of oxide of zinc, mixed by any suitable means and spread into sheets, which are wound around a shaft and vulcanized, and turned or ground to the proper size.

Claim.—The covering of metal rolls with a semi-elastic vulcanized rubber compound for dresser rolls and for similar purposes, as set forth.

Also, as a new article of manufacture, rolls for dressing yarn and other like purposes, composed of a metal shaft or roll covered with a semi-elastic vulcanized compound having the properties requisite to operate as hereinbefore set forth.

No. 53,466.—WM. B. MCIVER, Worcester, Mass.—*Planing Machine.*—March 27, 1866.—This invention consists in the special construction of the piston and valves where a hollow piston rod is used. The rim of the piston is cast in a single piece, having a central horizontal partition within it through which are made several ports to admit water in the upward stroke, and a projection or bearing into which the piston rod is screwed. The valve has its seat immediately beneath the partition, with the usual water packings on its periphery, and is held in its seat by a hollow plug-screw, with water passage through it leading the water direct to the hollow piston rod on its downward stroke.

Claim.—First, the combination with the feed rolls of a planing machine or machine for working lumber of the bevel gearing F V H U and sliding shaft G, substantially as and for the purposes described.

Second, the combination with the feed rolls in a planing machine of mechanism for operating both rolls upon their axes, and for elevating and lowering the top feed roll, substantially as herein described.

Third, supporting the gear end of the feed roll and the upper end of the vertical shaft in the same stand or bearing piece, substantially in the manner and for the purposes stated.

Fourth, supporting the upper end of the vertical shaft as described, in combination with giving its lower end play, as and for the purposes set forth.

No. 53,467.—JACOB MICHEL, Rochester, N. Y.—*Pump.*—March 27, 1866.—This invention relates to that class of double-acting pumps where a hollow piston rod is employed, and the piston is so constructed and arranged that at each stroke of the piston the valve alternately rises and falls in the space between the seat and the partition, and alternately opens and closes the ports, and thus admits water alternately over and under the valve into the ports of the valve seat, where it is elevated through the hollow piston rod to the top of the well.

Claim.—The combination and arrangement of the valve seat D, made to adjust lower or higher to give greater or less play to the valve, the valve E, provided with the flange *l* and water-packing grooves *m m*, and the piston rim C, made in a single piece, the whole operating substantially as and for the purposes herein set forth.

No. 53,468.—ALBERT L. MUNSON, New Haven, Conn.—*Table Napkin.*—March 27, 1866.—This invention consists in the production of a napkin made of paper and cloth combined, either by attaching a single thickness of each material together or by uniting paper to each side of the cloth.

Claim.—First, a paper and cloth napkin, substantially as described.

Second, a paper and cloth napkin when embossed or printed or perforated, substantially as described.

No. 53,469.—DAVID MYERS and L. H. NOBLE, Chicago, Ill.—*Steam Water Elevator.*—March 27, 1866.—The object of this invention is to raise liquids by the aid of steam and

mechanical devices, and it consists in the arrangement of the reservoir, induction and eduction pipes, a steam pipe provided with valves, shafts, and a lever.

Claim.—First, the combination of the reservoir A, the induction and eduction pipes C and D, and steam pipe E, provided with the valve *c b a*, respectively arranged and operating substantially as and for the purposes specified.

Second, in combination with said reservoir A and pipes C D E, the shaft G, arm J, and lever I, for the purpose of opening and closing the valves *a b* simultaneously, for the purposes described.

No. 53,470.—OLIVER T. NANNY, Mamakating, N. Y.—*Hay Loader.*—March 27, 1866.—On the rear platform of an ordinary wagon is placed a tubular post, connected with which, by means of rings or circular braces, is a crane carrying a hay-fork. The hay-fork has a spring and catch, to which a guide rope is attached for the purpose of directing the movements of the crane and for disengaging the fork from the hay.

Claim.—The tubular post B, with its rings E E, in combination with the crane D, the hay fork G, and bifurcated spring catch P, for the purposes described.

No. 53,471.—FREDERIC I. PALMER, Springfield, Mass.—*Button.*—March 27, 1866.—In this invention the shank enters from within the fabric, and, having an annular groove, receives therein on two opposite sides two springs of wire forming a circle within the periphery, except that the two ends are turned inwardly and extend to the opposite sides.

Claim.—The combination of the stud B, notched as described, with the spring C and the other parts of the button, substantially as herein set forth.

No. 53,472.—FREDERIC INGERSOLL PALMER, Springfield, Mass.—*Fastening for Garments.*—March 27, 1866.—In this invention the collet has a central hole and radial slits therefrom about half way to the periphery. A shank held by a disk inside the cloth has an abrupt shoulder at its other end which passes through the collet, the sections of which collet incline inward and abut against this shoulder to prevent the backward movement of the shank.

Claim.—The attachment of fastening composed of the springs and the pin or stud, substantially as herein shown and described.

No. 53,473.—A. J. PEAVEY, South Montville, Me.—*Combined Pistol and Pocket Knife.*—March 27, 1866.—In this invention a small barrel is pivoted within the handle of a pocket knife so that it may be tilted up at the rear end to receive its cartridge at the breech. It is discharged by a suitable hammer and trigger within the handle.

Claim.—First, so hanging the barrel of a pistol within the casing or handle of a pocket knife that its breech end can swing out of or into the same, substantially as described, and for the purpose specified.

Second, the combination of the hook end or arm G of the pistol barrel with the spring catch F, of the breech-piece O of the knife handle, arranged together and operating as and for the purpose described.

No. 53,474.—ISAAC NEWTON PEIRCE, Philadelphia, Penn.—*Seat and Desk for Schools.*—March 27, 1866.—This invention consists of a seat pivoted to a crane which is attached to one end of the desk so that the seat will turn and swing under the desk.

Claim.—The application of a crane movement, by which a chair may be attached to its own desk and yet have a free movement, as substantially set forth.

No. 53,475.—T. W. PEIRCE, Minneapolis, Minn.—*Beehive.*—March 27, 1866.—This invention consists in constructing the hive of corn cobs, placed upon end one above the other, and held in position by external hoops at the basin and centre.

Claim.—A beehive constructed of corn cobs, substantially as shown and described.

No. 53,476.—CHARLES H. PERKINS, Providence, R. I.—*Manufacture of Sheet-iron.*—March 27, 1866.—This invention consists in piling the sheet-iron from which the scale has not been removed in a flask, a layer of cast-iron filings or turnings being placed upon the top of each sheet. The flask is then closed in and heated in a furnace, after which the sheets are removed and passed between rolls. They are then annealed and treated in the ordinary manner for the manufacture of Russia iron or for galvanizing.

Claim.—Preparing plates of sheet-iron, whether for receiving a coating of zinc or other metal preparatory for polishing and coloring in imitation of Russia iron by the application of the decarbonizing process, substantially as described.

Also, preparing plates of sheet-iron for coloring in imitation of Russia iron by first decarbonizing them and then rolling them, substantially as described.

No. 53,477.—F. L. PERRY, Canandaigua, N. Y.—*Box for Propagating Plants and Vines.*—March 27, 1866.—This invention consists in a box composed of a series of compartments separated by vertical partitions, each of which, together with the sides of the box par-

allel with the partitions, are readily removable, thus allowing the soil and plants in each compartment to be removed without injury to the roots of the plants.

Claim.—A box for the propagation of plants or cuttings, constructed with movable or detachable sides and partitions, substantially in the manner herein set forth.

No. 53,478.—JOHN G. PERRY, Kingston, R. I.—*Pole and Thill for Carriages, &c.*—March 27, 1866.—This invention consists in the combination of an upper or cap rail, with lateral flanges, and an interposed elastic strip, with a lower continuous bearing rail.

Claim —First, the convertible pole and thills *k k*, in combination with the adjustable cross plates *a b*, constructed as herein described and for the purpose set forth.

Second, in combination with the foregoing the use of the projections *i j* to connect the pole and thills to the machines and carriages, substantially as herein described.

No. 53,479.—D. C. PIERCE, Clayton, N. Y.—*Railroad Rail.*—March 27, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—The combination of the upper or cap rail with lateral flanges, the interposed elastic material and the lower continuous bearing rail supported upon the road bed either immediately or by intervening chairs or sleepers.

No. 43,480.—FREDERICK PILLING, Washington, D. C.—*Hub or Spool for Curtain Rollers.*—March 27, 1866.—This invention consists in casting the end caps or hubs of a window shade or curtain roller in one piece, which comprises the cap, the pulley, the journal on which it turns, and the means of securing itself to the roller.

Claim.—A cap or hub for the rollers of window shades, curtains, or other similar purposes, cast in one piece, and comprising within itself a flange, pulley, journal, and screw, for securing it to the roller, substantially as described.

No. 53,481.—E. A. POND and M. S. RICHARDSON, Rutland, Vt.—*Apparatus for Carburetting Air*—March 27, 1866 —This invention consists of a reservoir, within which is a coiled pipe, terminating near the top of said reservoir, and communicates with the reservoir at the side. Near the bottom of a reservoir is an air pipe entering through the side, and terminating within the coil. There is a diaphragm upon which the hydrocarbon liquid is forced out of the pipe.

Claim.—First, the improved gas machine, substantially as herein described, the same consisting of one or more coils of pipes so combined with a fluid vessel and air-forcing apparatus that the said coil or coils shall be constantly supplied with fluid by the action of the blast and hydrostatic pressure, and a continuous circulation of fluid maintained therein as set forth.

Second, the arrangement of the coil in relation to the fluid reservoir so that the air shall be discharged from the coil above the level of the fluid in the reservoir, substantially as herein shown and described.

Third, the arrangement of the air supply pipe relatively to the coil and the fluid reservoir, substantially as herein shown and described, so that the current of air shall be impelled upwardly and along the tubular coil as set forth.

Fourth, the method herein described of combining the air supply pipe with vaporizing coil by inserting the contracted end of the former into the larger tube of the latter for operation as an injector, substantially as set forth.

Fifth, the employment, in connection with a communicating pipe or coil extension under the bottom of the fluid, of a stopper of bamboo, or other porous material, as and for the purposes set forth.

Sixth, the use in combination with a fluid vessel and coil of a perforated diaphragm or dome for returning the fluid ejected from the coil in spray-like form to the reservoir, and thus fill the gas collecting chamber with hydrocarbon vapor, as set forth.

No. 53,482.—E. A. POND and M. S. RICHARDSON, Rutland, Vt.—*Gas Apparatus.*—March 27, 1866.—This invention consists in the use of a steam or gas engine for driving the air-pump of carburetters used in hotels, locomotives, &c. The gas for driving said pump may be generated by the carburetter, any ordinary means being used to start it. The air before passing the carburetter is passed through a tube, one branch of which passes through a sand bath properly heated, in order that the air may be kept at the proper temperature in the winter.

Claim.—First, in combination with an apparatus for charging atmospheric air with the vapor of hydrocarbon fluid, the method of utilizing steam from available sources, substantially as is herein described, for forcing the air through hydrocarbon liquid or vapor.

Second, the construction of the air-pipe with branches, and providing the same with stop cocks, so as to supply the vaporizer with hot or cold air at pleasure, substantially as set forth.

Third, generating illuminating gas by means of an apparatus consisting of the combination with a vaporizer, of an air-pump driven by a gas engine, which receives its supply of gas from the gas generator, substantially as herein described.

No. 53,483.—AMAZIAH M. PREBLE, Lynn, Mass.—*Gaiter Shoe.*—March 27, 1866.—This invention consists in a shoe-fly, provided with an elastic gore arranged longitudinally in it, such fly being applied to the shoe by means of buttons, and being wholly detachable.

Claim.—The fly as made, with the elastic gore arranged in it, as described.

Also, the combination and arrangement of the fly and its buttons with the instep opening, or the same and its lacing, and lacing holes, the whole being substantially as hereinbefore described.

No. 53,484.—WILLIAM M. PYLE, Greensburg, Ind.—*Churn Attachment.*—March 27, 1866.—This invention consists in a supplementary cover, upon which is supported a train of gearing, by means of which the dasher is put in motion.

Claim.—The combination with the gearing J K, crank *p*, crank wheel L, frame *g h*, and dasher staff *f* of the detachable supplementary lid or cover C, hooks D, and pins *e*, substantially as and for the purpose specified.

No 53,485.—EMMETT QUINN, Washington, D. C —*Boring Machine* —March 27, 1866.—This invention has for its object the discharge of chips by the introduction of water into the shaft of the boring tool; the water mingling with the chips at the point where they leave the cutters and passing therewith to the outside of the bore.

Claim.—The employment in a machine for boring wooden tubes of one or more pipes, conveying water to the cutters, whereby the chips made by the cutters are discharged from the machine by the force of the water, when constructed and operating substantially as described.

No. 53,486.—EMMETT QUINN, Washington, D. C.—*Tool for Turning Wood.*—March 27, 1866.—This invention consists in a cutting tool in a stock that is supplied by a pipe, through which water passes to the shaving cut by the tool, and both shavings and water are discharged together through an exit pipe for that purpose.

Claim.—A hollow cutter stock and its cutter, when constructed as described, in combination with a hollow tube supporting said cutter stock, and a discharge pipe, arranged to operate substantially as described and for the purposes set forth.

No. 53,487.—L. B. RANDALL, West Glover, Vt.—*Churn.*—March 27, 1866.—This invention consists in hinging or pivoting the frame or upright which supports the gearing employed for operating the churn, in such a manner that it may be folded down alongside of the churn, so as to place the whole in a more portable condition, and so that it will occupy but little space when the churn is not required for use.

Claim.—Hinging or pivoting the frame or upright D which supports the gearing for operating the churn, in such manner that it may be folded, substantially as specified.

Also, the rack L, in combination with the bar K, and hinged upright D, substantially as specified.

No. 53,488 —ANDREW RANKIN, New York, N. Y.—*Urinal.*—March 27, 1866.—This invention consists in arranging the eduction tube in the bottom of a vessel, whether of wood or metal, like an ordinary pail, with the upper end of the tube rising several inches from the bottom of the vessel, around which tube is placed a quantity of deodorizing material, from off which the urine flows over the upper end of the tube, and away to the outlet.

Claim —A urinal in which a deodorizing agent is applied around an eduction tube, arranged in relation to the vessel, as herein shown and described.

No. 53,489.—FOSTER RHINES, Watertown, N. Y.—*Mop Wringer.*—March 27, 1866.—This invention consists in a combination of devices, which are adapted for being operated by the foot, with a pail or bucket, which is intended for containing water, and for receiving the water which is wrung out of the mop.

Claim.—The combination of the roller C with fixed bearings, the roller D, applied to the arms *b b* of the treadle G, the spring or springs E E, and the pail A, substantially as described.

No. 53,490 —W. H. RISLEY, Berlin, Conn.—*Metallic Cartridge for Loose Ammunition.*—March 27, 1866.—In this invention a thin metallic tube is divided by a fixed transverse diaphragm at its middle, into two compartments or chambers, one of which is intended to hold the powder, and the other the shot or ball, which are respectively secured by suitable removable wads. These cartridges are not inserted in the fire-arm, but are designed merely as convenient receptacles of the several charges, which are emptied therefrom into the barrel, and are accordingly suited for muzzle-loading fire-arms.

Claim.—The cylinder A, made substantially as described, with a fixed partition to divide it into a shot or ball, and a powder chamber, being of a diameter about equal to the bore of the gun with which it is to be used, so that the wad can be used to shut the chambers, and with means for removing the wad at pleasure, substantially as described.

No. 53,491.—CYRUS W. SALADEE and THOMAS SIMPSON, Newark, Ohio.—*Plough Point.*—March 27, 1866 —This invention consists in the peculiar manner of attaching plough points to the share of the plough, and will be understood by reference to the claims and engraving.

Claim.—First, imbedding the point A^1 in the top surface of the share B, in the manner and for the purpose substantially as shown and described.

Second, the stud C^1, figure 3, or its equivalent, in combination with the point A A^1, indentation F, and slot H, as and for the purpose substantially as set forth.

Third, the bevelled lips E of the point A, figure 3, in combination with the corresponding lips E, figure 2, substantially as and for the purpose shown and described.

Fourth, the short wedge D, figure 3, in combination with the stud C^1, and slot H, in the manner and for the purpose substantially as shown and described.

No 53,492.—CHARLES A. SCOTT, Aurora, Ill.—*Bed-bottom.*—March 27, 1866.—In strips attached to the frame at the head and foot of the bed-frame are wedge-shaped mortises or sockets, in which are fitted blocks attached to each end of the slats. In the upper part of each block is a wedge-shaped slot, in which are secured elastic straps, by means of pins passing through a fold in the strap and the slot.

Claim.—The herein described mode of securing the ends of the elastic straps in and to the said blocks and slats, by means of the pins *a c*, as and for the purposes described.

No 52,493.—HENRY C. SERGEANT, New York, N. Y.—*Steam Generator.*—March 27, 1866.—This invention consists in arranging a series of tubes with a partition in them, in an inclined position, so that the fire shall act with the greatest intensity on the under side of such tube, thus causing a circulation of water through the same, from one end of such tube to the other, and returning to the lower side, where the greatest amount of heat is imparted. It further consists in the combination of tubes so constructed, with the inclined water leg and the plate which supports the outer end of such tubes.

Claim.—First, a tube with a partition in it, when so arranged that the fire will operate with the greatest intensity on one side of the tube, so as to cause a circulation of the water in opposite directions in the tube.

Second, the combination and arrangement of the above described tubes with the inclined water leg and plate, for holding the outer ends of tubes in position, substantially as shown and described.

No. 53,494.—CHARLES C. SHELDRAKE and JOSEPH BREADY, Philadelphia, Penn.—*Soda-water Apparatus.*—March 27, 1866.—This invention consists in attaching a bottom to the soda fountain by means of a screw thread, leaving a space between the wall of the fountain and said bottom, which is filled with suitable packing. The bottom is made conical in order to collect the sediment that may settle in the fountain.

Claim.—First the cup or convave-shaped bottom B, as constructed and applied, in combination with the fountain A, substantially in the manner and for the purpose as herein set forth.

Second, the application of the cup or bottom plate B, in its connection with the fountain, by means of the screw threads *a*, substantially in the manner and for the purpose as herein set forth.

No 53,495.—FRANCIS SHENTON, Slatington, Penn.—*Slate Frame.*—March 27, 1866.—This invention will be understood by reference to the claim.

Claim.—A slate frame, when constructed with a mitre joint, tongue, groove, and secret dowel pin, substantially as described.

No. 53,496.—JOHN T. SMITH, Middletown, Conn.—*Milling Tool.*—March 27, 1866.—This invention consists in making the tool in two parts, the two faces adjoining each other on the shaft being inclined, so that they may be separated by thin sheets of paper or metal, and placed close together, and thereby made to operate upon the surface, or in grooves of different width.

Claim.—A cutter or milling tool, made in two parts of irregular shape, substantially such as herein described, so that by interposing disks of paper or other suitable material, the cutting face of the tool can be adjusted for slots or grooves of different widths.

No. 53,497.—JAMES SPEAR, Philadelphia, Penn.—*Cooking Stove.*—March 27, 1866; antedated January 10, 1866.—In this invention the sifting pan is inclined, and can be vibrated above a separate ash box; both are enclosed within a chamber under the hearth provided with doors in front. The bottom plate of the stove and ash pit is of one casting. The fire chamber is wholly over the oven, and the ash box, &c., is in front.

Claim.—First, the application of an inclined sieve, when applied within the limits of a stove or range, as shown and described.

Second, the sieve B, the doors D, the hearth plate A, the partition plate G, and frame L, arranged and combined substantially as described.

Third, the bottom plate J and L, when arranged in combination with the partition plate G and hearth plate A, as shown and described.

Fourth, the enclosed sifting pan B, capable of being vibrated, in combination with an ash pan O, when both are applied to a stove or range, as shown and described.

No. 53,498.—JAMES F. SPENCE, Wilhamsburg, N. Y.—*Condenser.*—March 27, 1866.—This invention consists in extending the exhaust pipe from the engine when used on board of a vessel, to such a point below the paddle wheels that the vacuum created at the mouth of

the exhaust pipes will relieve the engine of its back pressure. This effect is produced by the combined action of the propelling wheel, and the pipes which conduct the steam to the proper point to be thus acted upon.

Claim.—The pipe or pipes D which connect with the exhaust pipe of a steamboat engine, in combination with the paddle wheel or wheels B, substantially as and for the purpose described.

No. 53,499.—N. C. STILES, West Meriden, Conn.—*Foot Press.*—March 27, 1866.—This invention consists in the arrangement of two segmental cams, one leaning against the other, in combination with a suitable foot-piece or treadle, and with the working lever, which imparts motion to the slide or head carrying the punch, in such a manner that, by the combined action of the segmental cams and foot-lever, a powerful motion can be imparted to the punch; and, by changing the cams, any desired motion can be given to the punch.

Claim.—First, the segmental cams G H, in combination with the working lever F, punch E, and foot-lever I, constructed and operating substantially as and for the purpose set forth.

Second, providing the segmental cams with cogs on the sides of their working faces, substantially as and for the purpose described,

Third, the arrangement of clutches K, or other equivalent devices, in combination with the cams G H, lever F, and punch E, constructed and operating substantially as and for the purpose set forth.

No. 53,500.—DANIEL B. STURDEVANT, WM. C. PARSONS, and FREELAND WHEELER, Clifton, N. Y.—*Milk Shelves.*—March 27, 1866.—This invention consists in the employment of a series of revolving shelves of skeleton form, arranged one above the other in a portable frame, each one revolving independently of the rest, and resting on friction rollers, to support it steadily and allow it to turn easily.

Claim.—The combined construction and arrangement of the series of independently revolving skeleton shelves D D, friction rollers *k k*, and portable frame A B, the whole admitting a free circulation of air and operating substantially as and for the purpose herein set forth.

No. 53,501.—THOMAS L. STURTEVANT, Boston, Mass.—*Priming Cartridges.*—March 27, 1866.—This invention consists in making the percussion pin of the full size of the external diameter of the percussion cap, so that when the cap is fitted on a suitable contraction at its end, it may be inserted through the opening at the rear of the cartridge ready capped. The firing pin is reduced in size at the outer surface of the cartridge, so as to form a shoulder which, resting against the outer surface of the gun, resists the expulsion of the pin by the discharge.

Claim—A percussion cap plunger or discharger as made with a cap entrance-stopper *b*, and with a cap carrier *a*, arranged and designed to operate therewith, as and for the purposes set forth.

Also, the combination of the shoulder *h* arranged at the top of the stopper, with the said stopper *b* applied to the cap discharger, for the purpose set forth.

No. 53,502.—E. SWEETLAND, South Bend, Ind.—*Machine for Cleaning Grain, &c.*—March 27, 1866.—This invention consists of a machine for cleaning and sifting grain, flour, &c., and which is constructed of tin or other material, and is supported by legs that extend up on the ends of the case. The bottom of the case forms a sieve or screen.

Claim.—The arrangement of the radial and inclined wings D and E, case A in combination with the shaft B′, crank C, and screw D′, in the manner and for the purpose set forth.

No. 53,503.—JOSEPH A. TALPEY, Somerville, Mass.—*Attachment for Cooking-stoves.*—March 27, 1866.—In this invention, above a cook-stove is placed a small stove, having a movable fire-box, and a hole in its top for cooking-vessels, designed for summer use.

Claim.—The cooking-stove attachment herein described, arranged in the place of the pipe elbow, as and for the purpose set forth.

No. 53,504.—WM. THOMPSON, Cleveland, Ohio.—*Apparatus for Carburetting Air.*—March 27, 1866.—This invention consists of a vertical cylinder communicating with a horizontal cylinder, having a shaft passing through it and entering the cylinder through the side and terminating within it with a gear wheel, which operates a wheel on the shaft within said cylinder. The shaft carries a blower, which is composed of a series of spiral buckets. The agitators are attached to the shaft within the vessel, and in the upper part of the said vessel is a short tube into which the hydro-carbon fluid flows through the pipe. The tube has communicating with it a series of perforated pipes, which supply the hydro-carbon to the vessel, the supply being controlled by means of a regulator operated by the top.

Claim.—First, the curved tapering chambers *b*, pipes *c*, and cylinder D′, in combination with the cylinder C, pipe S, chamber *p*, and pipe *u*, arranged in the manner and for the purpose described.

Second, the float P′, crank J, rod *k*, and lever *r*, in combination with the rod *l*′, valve *l*, and pipe I, arranged in the manner and for the purpose set forth.

Third, the radiating perforated pipes *h'*, annular chamber *f*, and opening *o*, in combination with the pipe I and cylinder A, arranged as and for the purpose set forth.

Fourth, the arrangement of the perforated cylindrical chambers E F and spaces or straining chambers *z*, in combination with the gears *a a'*, shaft *e*, and cylinder A, operating in the manner and for the purpose set forth.

Fifth, the purifying box N, in combination with the cylinder A and its internal devices, as and for the purpose set forth.

No. 53,505.—JOHN TILLEY, West Troy, N. Y.—*Water Elevator.*—March 27, 1866.—This invention consists in constructing the windlass roll in two parts, one of which is made movable upon the shaft for adjusting the ropes or chains to an equal length for each bucket, after which the movable part of the roll is keyed fast on the shaft. Two guide bars are arranged within the curb, for tilting the doors, (forming also the spouts,) by which, as the buckets are raised, the doors will be opened and the water conducted away through the spouts arranged thereon.

Claim.—First, the arrangement of the slide or slides *b b*, guide or guides *d d*, link or links *c c*, combined door and spout or doors and spouts B C *a*, and valved bucket or buckets E E', all constructed and operating substantially in the manner and for the purpose described.

Second, the arrangement of the valved buckets, combined door and spout, and the slide *b*, substantially as described.

Third, the construction of the windlass G of two sections *m n*, in combination with a provision for keying the section to its shaft, substantially as described.

No. 53,506.—CHARLES N. TYLER, Buffalo, N. Y.—*Lamps.*—March 27, 1866.—The object of this invention is to insure the free egress of the vapor, which may be effected by allowing the wick tube to be very loose in its tube and suitably supported. The combustion wick may be supported by the supply wick alone. Inside the tube is a small metal disk having a central opening through which the wick passes and by which it is supported, and other openings around the central one, for the free egress of the vapor. The wick tube may also be provided with a series of vertical grooves on the inside, which may be either spiral or straight. The wick tube is provided with a metallic cap, packed with any non-conducting material.

Claim.—First, the wick W X, as shown in figures 2 and 3, substantially as and for the purposes set forth.

Second, the divided wick, substantially as and for the purposes set forth.

Third, the wick supporter *c*, substantially as and for the purposes set forth.

Fourth, the wick supporter *c* in combination with a wick tube larger than the wick, substantially as and for the purposes set forth.

Fifth, the wick tube C, as shown in figure 4, substantially as and for the purposes set forth.

Sixth, the wick tube C, as shown in figure 5, substantially as and for the purposes set forth.

Seventh, the grooved wick tube, as shown in figure 7, or its equivalent, substantially as and for the purposes set forth.

Eighth, the wick tube used with the loose wick, when provided with openings *o*, as in figure 9, substantially as and for the purposes set forth.

Ninth, the closed vapor chamber G, in combination with the wick W X, substantially as and for the purposes set forth.

Tenth, the cap D, in combination with the wick W X, substantially as and for the purposes set forth.

Eleventh, the cap D, in combination with the small wick, substantially as and for the purposes set forth.

Twelfth, the cap D, as shown in figure 6, substantially as and for the purposes set forth.

Thirteenth, the cap D, with openings *o*, as shown in figure 13, substantially as and for the purposes set forth.

Fourteenth, the valve chamber V, provided with a valve *v* and opening *s*, substantially as and for the purposes set forth.

No. 53,507.—FRANZ VESTER, Newark, N. J.—*Iron Railway Sleeper.*—March 27, 1866.—This invention consists in an iron railroad tie corrugated in such a manner that the rail comes in contact with two or more of the corrugated surfaces; the ends of the tie having flanges projected downward, in contact with the outer edge of the sleepers, to prevent any lateral movement.

Claim.—The herein described iron railroad tie, constructed in the manner substantially as set forth, as a new article of manufacture.

No. 53,508.—O. J. WARREN, New York, N. Y.—*Crimping Boots.*—March 27, 1866.—This apparatus is applied to the bench by a swivel device, which permits the whole to be turned to the right or left as the work proceeds. The curved bar, which supports the form upon which the leather is crimped, has its groove lined with rubber, which prevents the wrinkling of the leather while undergoing the stretching process. A spiral spring is employed to hold together the two parts of a clutch, and thus retain the work rigidly in any position,

but adapts the clutch to be disengaged to allow the shaft to be turned to bring the work in convenient positions for the operator. The yoke which clamps the form to its support can be adjusted at will, without interfering with its hold upon the form.

Claim.—First, the lining of the bar *o*, with India-rubber Q, when the same is made to serve the office of a holder, and is used in connection with a form P, applied to the rubber through the medium of a yoke N, or its equivalent, substantially as and for the purpose herein set forth.

Second, the nut K, on the screew *k* of shaft B, connected with the yoke N, through the medium of the collar M, for the purpose of allowing the yoke to be turned independently of the nut, for the purpose specified.

Third, the sleeve F, on shaft B, provided with a projection *j*, in combination with the notched hub G, collar H and spring I, substantially as and for the purpose set forth.

Fourth, the coupling by which the shaft B is attached to the bench, the same being composed of a plate C, secured to the bench by a screw D, and provided with a socket *a*, to receive a pintle *b* of a fork E, which is secured to the sleeve F by pivots *e e*, when said coupling, thus constructed, is used in connection with the boot crimping apparatus attached to shaft B, and for the purpose specified.

No. 53,509.—CHARLES WEED, Boston, Mass., assignor to himself and J. S. SHAILER, Roxbury, Mass.—*Water Meter.*—March 27, 1866.—This invention consists in changing the valves of the lesser cylinders to permit the water pressure to act alternately upon the piston, at each end of the measuring cylinder into which the water flows and is discharged, giving a correct measure of the water passing through it, from an induction to an eduction pipe.

Claim.—The arrangement of the primary and auxiliary cylinders and valves by which the main piston, driven by the pressure of the water, operates the valve of the auxiliary cylinders, and brings it into position to cause the pressure of water to operate, alternately, the pistons of the auxiliary cylinders, which, in turn, operate the valve of the main cylinder, substantially as described.

No. 53,510.—WILLIAM WELLS, South Danvers, Mass.—*Last.*—March 27, 1866.—This invention consists in forming a last for boots and shoes, with a detachable bottom piece or sole, so as to enable a new bottom piece to be attached to the main or body portion of the last, when the old one has become worn out, or rendered useless by the surface being worn by pegging.

Claim.—The two-part last herein described, divided horizontally near its lower surface, and otherwise adapted for use, in the manner and for the purposes specified.

No. 53,511.—JONATHAN WHEELER, Athol, Mass.—*Dish-washing Machine.*—March 27, 1866.—This invention consists of a suitable tank with racks and partitions, and provided with force pumps, so that water can be thrown upon the dishes repeatedly until they are clean.

Claim.—First, the comaination in a dish-washing machine of an ordinary force pump E G H, and flexible discharge pipes M, with each other and with the box or tank A, substantially as described and for the purpose set forth.

Second, the combination in a dish-washing machine of the box or tank A, with one or more horizontal partitions or troughs B C, so constructed and arranged that the same water may be forced upon the dishes any consecutive number of times, substantially as described and for the purpose set forth.

No. 53,512 —JAMES WHITE, Cleveland, Ohio.—*Churn.*—March 27, 1866.—This invention consists of a churn which is vibrated back and forth either by the hand levers or with the foot being placed on either of the pieces projecting from the lower end of the pendulum. As the churn is vibrated by its action, the milk is thrown around in the churn against the dasher, churning it in a short time, and the temperature is regulated, by means of the pipes, without putting any water in the milk.

Claim.—The tubes *h h*, dasher F, and case A, in combination with the pendulum C, gearing D *e*, and levers *d*, substantially as and for the purpose set forth.

No 53,513.—LEWIS B. WHITE, Moscow, N. Y.—*Truss.*—March 27, 1866; antedated September 27, 1865.—This invention is designed as an improvement upon a truss for which a patent was granted to same inventor on August 21, 1860, and it consists in the employment of two bearings arranged obliquely upwards to the end of the bow, and between the bearings is pivoted a pad lever, a screw passing through the bearings to form the pivot pin for the lever.

Claim.—The two pivot bearings *o o*, arranged at an angle to the end of the bow, in relation to the bow and pad lever, substantially as and for the purpose herein specified.

No 53,514.—JOHN WILLIAMS, Troy, N. Y.—*Feeding Device for Sewing Machines.*—March 27, 1866.—In this invention the steel plate is dovetailed into the feed dog or feed bar in such a way that the operating cams shall tend to tighten rather than loosen them.

Claim.—First, attaching to the feed point or part of a sewing machine which carries the feeding surface, an adjustable removable steel plate, or its equivalent, to receive the wear from the action of the part of the machine which raises it, substantially as above set forth.

Second, attaching to the feed bar of a sewing machine an adjustable removable steel plate, or its equivalent, to receive the wear from the parts of a sewing machine which act against it, substantially as described.

No. 53,515.—S F. WOODWORTH, Iowa Falls, Iowa.—*Machine for Swaging Sheet Metal Spouts*—March 27, 1866; antedated March 19, 1866.—This invention consists in arranging suitable dies for swaging spouts for sheet-metal vessels, in a stock having a shank that will fit a hole always found in a tinsmith's bench, and operating said dies with an eccentric.

Claim.—First, the arrangement of said dies B C in a standard A, so constructed as to fit the square holes usually found in a tinsmith's work bench.

Second, the dies B C, in connection with the lever D, provided with the arm *f* and eccentric projection *e*, substantially as set forth.

Third, the gauges *b*, in connection with the dies B C and lever D, for the purpose specified.

Fourth, having the upper surface of the die B in an inclined position to facilitate the adjustment of the blanks thereon, as set forth.

No. 53,516.—SILAS D. YERKES, Downington, Penn.—*Dairy House.*—March 27, 1866.—This invention consists in a frame constructed of light wood, or other buoyant material, and so formed as to receive the milk cans in a safe and permanent position, and which will float on the water in case of flood or overflowing of the milk house.

Claim.—The frame A, provided with suitable openings or holders for cans or pans containing milk or cream, or both, and constructed and arranged substantially as described for the purpose specified.

No. 53,517.—ROBERT M. BARTLETT, assignor to SARAH T. BARTLETT, Cincinnati, Ohio.—*Sealing Boxes, &c.*—March 27, 1866.—This invention consists in cutting grooves in the top, sides, and bottom of an ordinary box, and in making circular depressions at proper distances in the grooves. The grooves are made of the proper width to receive the tape or braids, the ends being brought together in the circular depressions, which are then covered with wax, upon which a suitable design may be impressed.

Claim.—First, the mode or method of sealing boxes, substantially as set forth.

Second, a grooved and indented packing box, either of wood or other suitable material, substantially as and for the purpose set forth.

No. 53,518.—WILLIAM BEST and MAHLON S. DRAKE, assignors to WILLIAM BEST, Newark, N. J.—*Machine for Ironing Hats.*—March 27, 1866.—The object of this invention is to iron the under side of the brim by an outward movement. A system of gearing operated by a crank wheel causes the hat properly blocked to revolve, and the iron moving in guides to be lifted up in moving forward and to descend previous to moving outward.

Claim.—First, controlling the movements of the smoothing iron, in the manner described, by means of guides *s s* and latches *v v*, arranged substantially as herein set forth.

Second, the pulley *f*, with its crank wheel *r*, the pitman *i*, vibrating arm *u*, and pawl *z*, arranged with reference to each other and with the ratchet wheel *x*, spur wheels *g* and *d*, and table A, substantially as herein set forth, for the purpose specified.

No. 53,519.—CALVIN M. BROWN, Aurora, Ill., assignor to DAVID B. TURNBULL, of the same place.—*Bed Bottom.*—March 27, 1866.—To the frame of the bed is secured a strip of such a shape as to form a groove between its upper edge and the frame. Within this groove is placed a wedge-shaped block secured by means of elastic straps, which latter are doubled and inserted in a slot in the end of the slats, the said slot having an enlargement in its end to receive a pin through the fold in the strap by which it is securely held in place.

Claim.—First, the combination of the wedge-shaped block D, the elastic strap E, and the slats G, arranged and operating substantially as and for the purposes specified.

Second, securing the elastic strap E to the wedge-shaped block D by passing the strap through the mortise in said block, in the manner shown and described.

No. 53,520.—J. W. BROWN and E. RICE, New York, N. Y., assignors to J. W. BROWN.—*Clasp for Pocket Books.*—March 27, 1866.—This device consists of a T-shaped button, which when turned in one direction is made to enter a slotted metal plate, and when turned in the other direction it catches under the inner edges of the said slotted plate and fastens the two plates together, to which the button and plate are attached.

Claim.—The lip *d* and nicks *e* in combination with the swivel button *b* and slotted plate *c*, constructed and operating substantially as and for the purpose set forth.

No. 53,521.—JAMES E. CASEY, assignor to himself and RICHARD LAMBERT, Courtland Village, N. Y.—*Churn.*—March 27, 1866.—This invention consists in giving a reciprocating rotary motion to a supplementary dasher, through the medium of a spirally-grooved guide, working within a set screw.

Claim.—A device for communicating a reciprocating rotary motion to a supplementary dasher of a churn, substantially in the manner and for the purpose set forth.

No. 53,522.—FRANCIS CLARK, Auburn, Mass, assignor to himself and THOMAS H. DODGE, Worcester, Mass.—*Breech-loading Fire-arms.*—March 27, 1866.—In this invention the breech block turns to one side to expose the rear end of the barrel, and is formed in two parts, held together by screws or otherwise, so that the strap portion thereof that clasps the cylindrical neck, securing the barrel and stock together, shall, by reason of its open joint, form an adjustable hinge for the said breech block.

Claim.—First, making block D in two parts, substantially as set forth.

Second, making the circular part D′ open as at *h*, as and for the purposes set forth.

Third, the combination of the parts E and F substantially as set forth, whereby end *c* projects past the end of F, and prevents any joint in the block where it comes in contact with the rear of the cartridge.

No. 53,523.—JOHN W. COBURN, assignor to himself and OLIVER F. CASE, New Haven, Conn.—*Water-proof Soles.*—March 27, 1866.—This invention consists in coating the inside of the soles of boots with rubber, after giving the leather sole, by pressure, the proper form to receive the coat.

Claim.—Coating the inside of the sole for boots and shoes with rubber or any of its allied gums, when prepared and united substantially in the manner and for the purpose herein set forth.

No. 53,524.—CHARLES CROW, assignor to himself and JAMES HOLLINGSWORTH, Onargo, Ill.—*Trammel for Ellipses.*—March 27, 1866.—This invention will be understood by reference to the claim and engraving.

Claim.—The making of five or more holes in the elliptical trammel sweep and graduating the same as above described, for the purpose of striking ellipses of different relative diameters, as set forth.

No. 53,525.—CHARLES DENTON, Pekin, Ill., assignor to himself, SAMUEL E. BARBER, and SAMUEL F. HAWLEY, Decatur, Ill.—*Cultivator and Seeding Machine.*—March 27, 1866.—To the front ends of bars comprising a part of the frame is connected a bar by means of joints formed of eyebolts, and to this bar is connected a frame of V form, consisting of two oblique bars connected at their front ends by a metallic plate. By means of a lever placed within reach of the driver the ploughs may be adjusted laterally to conform to the sinuosities of the rows of plants.

Claim.—First, the plough framing, consisting of the two oblique bars *c c*, connected together as shown, and connected to the bars D D of the main frame by means of the joints *b*, for the purpose of raising the ploughs out of the ground when desired.

Second, the pivoted draught pole O in combination with the pivoted plough standards K K, arranged substantially as and for the purpose specified.

Third, the main frame, consisting of the bar C, with slide bars D D attached, when used in combination with the plough frame composed of the oblique bars *c c*, and all arranged substantially as described.

No. 53,526.—HENRY H. ELWELL, assignor to the NORWALK LOCK COMPANY, Norwalk, Conn.—*Knob Latch.*—March 27, 1866.—In this latch one arm of the bell-crank lever, against which the knob spindle acts, has at its lower end a hemispherical socket for the reception of the inner end of the latch bolt, said inner end being in the form of a flat circular disk, joined to the bolt by a narrow neck. A sliding bar, one end of which projects through the edge of the lock case, passes across the flat face of the latch bolt, and a pin projecting from said bolt and bearing against the back edge of the bar, prevents the square portion of the head from passing out beyond the square mortise in the face plate. To reverse the bolt, the slide is drawn up away from the bolt, and the latter is then drawn out until its cylindrical neck shall occupy the mortise in the face plate—the circular end of the bolt being smaller than its socket, permitting of a movement of the bolt sufficient for this purpose.

Claim.—First, the connecting of the slide latch D with the arm *a′* of the lever B, by means of the recess *c* and socket *d*, of said arm, and the circular end *e* of the slide latch and the notches or the recesses *g g* in the top and bottom edges of the same, substantially as shown and described.

Second, in combination with the connection above specified, the pins *i* on the slide latch and the slide E, substantially as and for the purpose specified.

Third, the cylindrical collar *k*, on the side latch, in combination with the pins *i* and the slide E, substantially as and for the purpose set forth.

No. 53,527.—PLATT EVENS, Jr., Cincinnati, Ohio, assignor to the FLORENCE SEWING MACHINE COMPANY, Florence, Mass.—*Thread Tension for Sewing Machines.*—March 27, 1866.—In this invention the tension roller has the adjacent surfaces of its grooved part corrugated, the projections of one surface being opposite the depressions of the other, so that the thread shall have many angular deflections, instead of a regular circular coil, and hence also preventing the thread when cut off, at the end of a seam, from slipping or being loosened upon the tension wheel.

Claim.—Making and regulating tension in sewing machines by giving the thread a zigzag direction in its turns around the tension wheel, substantially as and for the purpose described.

No. 53,528.—J. H. FAIRCHILD, Highgate, Vt., assignor to himself and ANDREW PARKER, Cleveland, Ohio.—*Condenser*.—March 27, 1866.—This invention consists of a receiver, closed at the top by means of a basin, through which passes a pipe connected with the still, and provided with a funnel on its upper end; a pipe also passes through the basin into the receiver, and is provided with apertures. There is a pipe for the escape of the water, and another through which the oil is drawn from the receiver.

Claim.—First, the basin A and perforated condensing pipe F, in combination with the water pipe H and vapor pipe E, as and for the purpose set forth.

Second, the receiver B, pipe H, and pipe or spout G, in combination with the pipe F and basin A, as described.

Third, the employment of a current of cold water, introduced through the pipe C, so as to condense the vapor passing through the pipe F into oil in the receiver B, as specified.

No. 53,529.—J. W. GARDNER, assignor to the LAMPSON GOODNOW MANUFACTURING COMPANY, Shelburne Falls, Mass.—*Manufacture of Table Cutlery.*—March 27, 1866.—This invention will be understood by reference to the claim and engravings.

Claim.—The combination of the pronged bolster and blade, forged in one place, with a solid handle, all constructed in the manner herein represented and described.

No. 53,530.—JOSEPH GOODMAN, assignor to himself and RICHARD W. REYNOLDS, Pawtucket, R. I.—*Knitting Machine.*—March 27, 1866.—In this machine each needle carries a thread, and each row of needles interlaces its thread with those of the other row; the fabric may be united across the said loom, or may be formed in a series of strips, each independent of the other.

Claim.—First, the combination of a set of stationary needles *n*, constructed as described, with a set of movable needles *n'*, having a triple motion, viz., a rising and falling, an oscillating, and a transversely-sliding motion, substantially as and for the purpose set forth.

Second, the transversely sliding carriage K, in combination with the guide bar *t*, adjustable rod *d'*, lever *f'*, and ratchet wheel *k'*, constructed and operating substantially as and for the purpose described.

Third, the carriage K, and guide bar *t*, in combination with the oscillating lever *l*, and adjustable standard *q*, substantially as and for the purpose set forth.

Fourth, the carriage K and guide bar *t*, in combination with the slotted levers *v* and cams *a' a'**, constructed and operating substantially as and for the purpose described.

Fifth, the double-flanged cams *o'*, worm wheel *n'*, and serrated wheel *k'*, in combination with the pawl *j'*, lever *f'*, and carriage K, constructed and operating substantially as and for the purposes set forth.

Sixth, the rockshaft *i*, with levers *l h*, in combination with the standard *q* and carriage K, and with the spring pawl *g*, ratchet wheel *f*, and feed rollers F, constructed and operating substantially as and for the purpose described.

No. 53,531.—CHARLES HALL and EMIL HUBNER, New York, N. Y., assignors by mesne assignment to CHAS. HALL and J. D. VAN VOORHIS.—*Machine for Making Bolts.*—March 27, 1866.—This machine consists in a combination of preparing dies and the finishing die with a tubular die, which holds the blank while it is operated upon successively by the preparing die and finishing die, and with a carriage by the movement of which the preparing dies and finishing die are permitted to act in succession upon the piece. A movable gauge is employed for determining the projection of the end of the blank beyond the tubular die that holds it, so as to regulate the extent to which the end is upset at each operation. A guide and piston are also employed to push the piece into the tubular die in which it is held during the operation of the preparing and finishing dies.

Claim.—First, the combination of the preparing dies and finishing die with the tubular die and carriage, substantially as set forth.

Second, the combination of the subject-matter of the first part of the invention with the carriage of the machine, and with the cam shaft of the dies, for forming both the preparatory and finished head in such manner that the carriage is moved intermittingly, thus affording periods of rest during which the preparatory and finishing dies are operated substantially as set forth.

Third, the combination of the subject-matter of the first part of the invention with the movable gauge, substantially as set forth.

Fourth, the combination of the subject-matter of the first part of the invention, and the carriage of the machine with a stop operated by a cam to hold the carriage at rest while the bolt blank is successively in the proper positions to be acted upon by the several dies, substantially as set forth.

Fifth, the combination of the first part of the invention with the movable gauge of the tubular die, and with a cam by whose action the gauge is caused to expel the bolt blank, substantially as described.

No. 53,532.—A. M. HANSEN, assignor to WM. HIGBY, Stockton, Cal.—*Pump Valve.*—March 27, 1866.—This invention relates to the arrangement of a valve chamber and a series of valves, with partitions between them, through which, by a central opening, the water is

conducted to the valves, lifting them from their seats when the water is forced around their peripheries and through their centres. In the centre of the valve chamber is a partition, which, after the water has passed a portion of the valves, serves to arrest it for being discharged into the piston cylinder, where it is lifted to a position above the dividing partition by an ordinary force pump, and thence discharged again into the valve chamber, through other valves to the exit pipe.

Claim.—First, a pump valve constructed in such a manner and so arranged relatively to its seat that the liquid shall be allowed to discharge both at the centre and around the periphery of the valve, substantially as and for the purpose set forth.

Second, the plate C, formed with the channels 7 8 9 10 11 and 12, adapted to communicate respectively with the chambers 1 2 3 4 5 and 6, and so arranged that all may be closed or opened to the external air by the adjustment of the valve K, or an equivalent closing device.

Third, in combination with the valve chamber A, the detachable plate B, formed with the channels B′ B′, as and for the purpose specified.

No. 53,533.—WARREN S. HILL, assignor to C. S. BAKER, Manchester, N. H.—*Invalid Bedstead.*—March 27, 1866.—In this invention the bedstead has the head portion of the rack and the foot-posts hinged, and capable of being respectively lowered and adjusted at any desired inclination, by means of a ratchet and pawls.

Claim.—The combination of the rack C, segment D, cog-wheel E, shaft G, wheels H, jointed arm K, and feet A′, constructed and arranged relatively to each other, and operating in the manner and for the purpose herein specified.

No. 53,534.—GUSTAVUS A. JASPER, assignor to the UNION SUGAR REFINERY, Charlestown, Mass.—*Cleansing Animal Charcoal.*—March 27, 1866.—This invention consists of a tank, provided with a false perforated bottom, below which are perforated pipes for the admission of water and steam. Water is admitted to the upper part of the tank by means of a cock.

Claim.—The new or improved process substantially as hereinbefore described, for treating charcoal, either after or before its use in a filter for the cleansing of a saccharine or other liquid, the same consisting in boiling the charcoal in an acid solution and washing it, the whole being essentially as specified.

No. 53,535.—ROBERT D. KINCAID, assignor to himself and HALL & SPEER, Pittsburgh, Penn.—*Tuyere.*—March 27, 1866.—This invention will be understood by reference to the claims and engraving.

Claim.—In combination with a water box or reservoir, and a blast or air pipe passing through it, the sleeve jacket or pipe surrounding said air pipe and open to and communicating with the water in the water box for the triple purpose of surrounding said blast pipe with water, and for allowing for a free circulation of the water, and to prevent any sediment from clogging or lodging therein, substantially as and for the purpose described.

Also, in combination with an air pipe passing through the water box, horizontally, and capable of being attached or connected with a bellows, a vertical branch pipe rising up within the box for the purpose of being connected with a fan blower, both or either to be used substantially as described.

No. 53,536.—THOMAS J. LOVEGROVE, assignor to himself and HENRY BALDWIN, Jr., Philadelphia, Penn.—*Drill Feed for Artesian Wells.*—March 27, 1866.—This invention consists in feeding the drill rope from the bull-wheel over the end of the walking beam through a series of pulleys.

Claim.—First, feeding the drill rope from the bull-wheel over the end of the walking beam through a series or system of pulleys, substantially in the manner described.

Second, the combination with the bull-wheel and the pulley H on top of the derrick of the pulleys I J K, or their equivalent, substantially as and for the purposes set forth.

No. 53,537.—JOHN LYLE, Newark, N. J., assignor to himself and C. H. ALLEN.—*Spring Punch.*—March 27, 1866.—On the lower edge of the shorter part of one of the arms of the punch is attached a double spring, one arm of which spring extends down the arm of the punch and passing through a slot in the opposite arm. On the lower edge of the upper part of the aforesaid arm of the punch is formed a projection, to which is pivoted a thumb catch. The upper part of the thumb catch is formed so as to fit in notches in the flange of the revolving cylinder which carries the punches.

Claim.—First, the combination of the double spring D with the arms A and B of the punch, and with the thumb catch E, substantially as described and for the purpose set forth.

Second, the combination of the thumb catch E with the spring D, the arm A, and the revolving cylinder F, substantially as described and for the purpose set forth.

Third, the combination of the revolving cylinder F with the arm A and the thumb catch E, substantially as described and for the purpose set forth.

Fourth, the construction of the arm A, and its combination with the arm B, substantially as described and for the purpose set forth.

No. 53,538.—SAMUEL MARDEN, Newton, Mass., assignor to himself, WILLIAM H. ALLEN, A. P. TROTT, and CYRUS COBB, Jr.—*Machine for Preparing Peat for Fuel.*—March 27, 1866.—This invention consists in the combination of a rotary triturating mechanism, a reciprocating follower, and a mould box. With the moulds and follower are also combined vertical plungers in such a manner that, at each descent of the follower to fill and compress the material into one series of moulds, one of the series of plungers simultaneously descends and clears the mould previously filled.

Claim.—The combination of the triturating mechanism, the follower, and the moulds, when arranged to operate substantially as described.

Also, the employment of the clearers, in combination with the follower and double set of mould boxes, substantially as shown and described.

Also, the arrangement or combination of mechanism for actuating the follower and clearers, substantially as shown.

Also, the mechanism for imparting the reciprocating lateral movements to the mould box, substantially as set forth.

No. 53,539.—WILLIAM MASON, assignor to E. REMINGTON & SONS, Ilion, N. Y.—*Revolving Fire-arm.*—March 27, 1866.—In this invention a pivoted thumb piece is arranged in the rear of the cylinder, having a side hip or hook fitting beneath the flange of the cartridge, for the purpose of withdrawing the spent cartridge shells. The rear edge of the cylinder is bevelled off to give room to the said hook of the swinging thumb-piece, to engage freely with the flange of the cartridge.

Claim.—First, in combination with a revolving cylinder fire-arm, a pivoted and hooked cartridge case extractor, arranged to operate in connection therewith, substantially in the manner herein described.

Second, in combination with a hook upon the extractor, the bevelling of the rear end of the cylinder, so as to insure the entrance of the hook between the flange of the cartridge and the cylinder, substantially as described.

Third, the recess *f* in the face of the extractor, for allowing the cartridge case to turn or move while it is drawn out in a curved line from a straight chamber, substantially as described.

No. 53,540.—FREDERICK J. MILLER, assignor to WILLIAM J. MILLER, Brooklyn, N. Y.—*Frame for Securing Liquor and other Bottles.*—March 27, 1866.—The object of this invention is to lock up such bottles in the frame of a caster form by a movable device, which, when in place, secures the stoppers and bottles from being moved or opened.

Claim.—A frame for holding and locking up bottles by means of a movable locking device, substantially as specified, applied to retain the bottles and stoppers, as set forth.

No. 53,541.—SAMUEL PARKER, assignor to ELTON WARD, Forest Grove, N. J.—*Clothes Dryer.*—March 27, 1866.—This invention consists in arranging a set of lines upon a frame, so that the clothes to be dried may be hung inside of an apartment in their proper positions, and afterwards sent through a door or window out into the open air, and be brought back again at pleasure.

Claim.—First, a clothes frame sliding on guide-ways, for the purpose of receiving the clothes within a room and carrying them out into the open air for drying when arranged, and to expand and contract as herein described.

Second, the levers I I I′ I′, with the hanging cords for contracting the apparatus, to pass through a door or window, and expanding it for use, as explained.

No. 53,542.—EDWARD T. PRINDLE, assignor to himself and JAMES WALKER, Aurora, Ill.—*Piston-Rod Packing.*—March 27, 1866.—This invention consists in the combination of a perforated cap, which is screwed into the interior of the cylinder with the conical packing rings, in such a manner that steam is admitted from the cylinder through the perforated cap to the recess formed in the cylinder head and around the exterior of the conical rings, thus pressing them into steam-tight contact with the rod.

Claim.—First, the combination of the perforated cap *e*, for the admission of steam or other elastic agent, with the conical packing *d*, substantially as and for the purpose set forth.

Second, the combination of the perforated cap *e*, springs *c*, bearing ring *i*, and the sectional conical packing *d*, substantially as described.

No. 53,543.—JOSEPH RIDER, Newark, Ohio, assignor to himself and E. REMINGTON & SONS, Ilion, N. Y.—*Breech-loading Fire-arms.*—March 27, 1866.—In this invention, the arm, which has a barrel open at the rear, and closed only by the face of the hammer, which is pivoted under the barrel, has a trigger, in which is placed a swinging dog or pawl, which serves the purpose of securely holding the hammer at half cock.

Claim.—In combination with an under-hung hammer, such as described, a combined half and full cock trigger *d e*, pivoted to the frame and to each other, and acting in connection with the tail *b* of the hammer, so that the hammer may be securely held at half cock, and operate in the usual well-known manner at full cock, thus making the arm perfectly safe to carry when loaded, substantially as described.

No. 53,544.—D. T. Robinson, Boston, Mass., assignor to himself and Lorin L. Fuller, Malden, Mass.—*Car Brake.*—March 27, 1866; antedated March 21, 1866.—This invention consists in the application to an ordinary brake mechanism of a right angular lever, by means of which pressure is applied to the brakes by the stopping of the draught animals connected to a car, if on a horse railroad, or of the locomotive, if on a steam railroad as well as by the concussion caused by the approach together of two cars in a train of two or more.

Claim.—The application and arrangement of the lever D, or its equivalent device, substantially in manner and to operate as above described, and in combination with said lever the employment of the auxiliary rope or chain *b'*, essentially in manner and to operate as hereinbefore set forth.

No. 53,545.—John H. Trowbridge, assignor to himself and Daniel Fuller, New Haven, Conn.—*Soldering Iron.*—March 27, 1866.—This invention consists in forming the body of the tool of any cast metal, as iron, and forming the body, so that a point of copper may be cast thereon, requiring but a small quantity of copper to form a point.

Claim.—A soldering iron constructed in the manner substantially as herein described, as a new article of manufacture.

No. 53,546.—Leroy S. White, assignor to himself, Rogers & Brother, and Green Hendrick, Waterbury, Conn.—*Metallic Handle for Cutlery.*—March 27, 1866; antedated March 2, 1866.—This invention consists in soldering the tang to the handle of the knife by applying the solder through the end of the handle, which has been left open for that purpose, and afterwards closing said end by means of the cap, which fits into the said end of the open handle, and is also secured by soldering.

Claim.—First, the method of effecting the soldering of the tang of table and other cutlery in tubular metallic handles, by inserting the solder at or through the rear open end of the latter, substantially as described.

Second, constructing and applying the cap D, as described.

No. 53,547.—Henry Youle Hind, Frederickton, N. B.—*Apparatus for Preparing Peat.*—March 27, 1866.—This invention consists of a vessel having a conical partition composed of two perforated plates, with a sheet of strong canvas between them. Below said partition is a space communicating with an air pump by means of a pipe. The vessel is provided with a series of perforated pipes, covered with canvas around its sides, and communicates with a coil which passes through a fire chamber. The peat is discharged through a tube, in which are arranged knives for dividing the peat into blocks, and after passing through the tube falls on an apron.

Claim.—First, the method herein described of drying peat and preparing it for immediate use as fuel, by exhausting the moisture and compressing the peat, substantially as and for the purposes set forth.

Second, the concical or funnel-shaped perforated bottom B, with the interposed layer or filling of canvas, or its equivalent, as and for the purpose described.

Third, the combination of the cylinder A, perforated bottom B, and chamber C, as and for the purpose set forth.

Fourth, the combination of the cylinder A, perforated bottom B, chamber C, and the air-exhausting apparatus, as and for the purpose set forth.

Fifth, the combination of the cylinder A, provided with the false bottom B and air space C, with the heating apparatus S, and its connecting pipe T, substantially as and for the purpose described.

No. 53,548.—Prosper Polain, Brussels, Belgium.—*Revolving Fire-arm.*—March 27, 1866.—The revolving cylinder has lateral or external openings into each chamber large enough to admit the cartridge. The barrel and front plate, to which are attached a number of thimbles or inner tubes equal in number to the chambers, are capable of being drawn forward for the purpose of loading the cylinder rapidly, and when pressed back and locked in position, the inner thimbles slipping over the cartridges, enclose them in closed chambers.

Claim.—First, the combination of the following elements: a revolving cylinder, whose chambers are provided with lateral openings and countersunk grooves, as set forth.

Second, a cluster of charge tubes capable of revolution with the revolving cylinder, and of sliding on its axis, as herein described, the whole operating so that the fire-arm may be loaded or the charges withdrawn without disengaging the sliding charge tubes from their respective cylinder chambers.

No. 53,549.—Philipp Wenzel, Mayence, in the Grand Duchy of Hesse Darmstadt, assignor to Sampson R. Urbino, Boston, Mass.—*Substitute for Leather.*—March 27, 1866.—This invention consists of a composition of gelatine gum-arabic, glycerine, and water, rendered insoluble by means of a bath of tannic acid.

Claim.—The composition made substantially as described.

No. 53,550.—Edward Oliver and George Myers, Rotherdam, England —*Apparatus for Disengaging Boats from Davits.*—March 27, 1866.—Patented in England September 9, 1863.—This invention will be understood by reference to the claims and engraving.

Claim.—First, the tube A, enclosing the rod B, formed with right-handed and left-handed screws *a* and *b*, with their screw-threaded nut, recessed to receive the pointed ends of the hooks E E and handle or hand-wheel C, the braces D, with their weighted hooks E E, and the locking catch *m*, the whole being arranged substantially in the manner and for the purposes hereinbefore described and set forth.

Second, the double-barrelled windlass, with its weighted lever brake K, substantially in the manner and for the purposes hereinbefore described and set forth.

Third, the two rods *a a*, with their curved inner ends *b b*, and furnished with a rack, the teeth of the said rack gearing into the pinion *c*, which is caused to rotate from the outside by the weighted lever or hand wheel *d*, the whole being operated substantially in the manner and for the purpose hereinbefore described and set forth.

And lastly, forming the lower ends of the brace pieces D D, with the jaw pieces *c c*, for inserting the ring or hooks by which the boat is suspended, and passing the rods *a a* through the hooks or the eye of the rings by which the boat is suspended, the same being operated substantially in the manner and for the purposes hereinbefore set forth.

No. 53,551.—JACOB MILLER.—Canton, Ohio.—*Dropper for Harvesters.*—March 27, 1866.—The object of this invention is to catch and hold the grain which is severed by the cutting apparatus, until a sufficient quantity has accumulated to form a gavel, then further accumulation being arrested, to deposit the same on the ground behind the cutter. A flexible apron or dropper is raised in front, so as to form such an angle as to cause the grain to slide off backwards on the ground, and so constructed that the movement of said apron to discharge the grain interposes another section of the apron to arrest the accumulation of the grain, and prevent it from getting under the front of the dropper, when raised to discharge the gavels.

Claim.—A flexible dropper for catching, holding, and delivering grain as it comes from the cutters, constructed and operating in the manner and for the purpose substantially as described.

No. 53,552.—S. F. AMBLER, Tuolumne county, Cal.—*Quartz Crusher.*—April 3, 1866.—The strip on the mortar box extends along the inside of the discharging edge of the box.

Claim.—The strip or flange *c*, attached to the mortar box A, of a float quartz battery, substantially as shown, for the purposes set forth.

No. 53,553.—D. D. ARMES, Decorah, Iowa.—*Weighing and Measuring Grain.*—April 3, 1866.—The boxes have latched bottoms, are suspended from the arms of an oscillating beam, and reciprocate vertically; the grain is guided into the boxes alternately until the quantity is reached, when the downward motion shifts the rolling weight, the bottom is unlatched, the contents discharged, and the bottom of the other box latched. The motion of the lever works the tally wheel.

Claim—First, the combination of the measuring boxes C D, slides R′ R′, and bales *d d*, and arms *e e*, substantially as and for the purpose set forth.

Second, the self-emptying cups *m′ n′*, in combination with the rods *r′ r′*, and links *s s*, substantially as and for the purpose set forth.

Third, the arrangement of the shoes M N, links *s s*, and rods *r′ r′*, in combination with the cups *m′ n′*, rods *l l*, bar K, and boxes C D, substantially as and for the purpose set forth.

No. 53,554.—EUGENE F. BADGLEY, Brooklyn, N. Y.—*Safeguard for Watches.*—April 3, 1866.—A loop on the lower edge of the watch is engaged by a strap fastened to the garment.

Claim.—First, the attachment to a watch or locket case of a clamp or ring, when constructed in the manner and for the purpose as described.

Second, also the strap or its equivalent, when attached to a watch or locket case by a clamp or ring, in the manner and for the purpose as described.

No. 53,555.—PHINEHAS BALL, Worcester, Mass.—*Gauge Cock.*—April 3, 1866.—The service pipe at its induction end has a filter; by the partial rotation of the spigot the water is turned through a waste-way to clean the filter, or an equal motion in the other direction empties the service pipe beyond the cock.

Claim.—First, the combination and arrangement within the chamber V, of the filter S, with the water-way I, and port *n*, as and for the purposes stated.

Second, the combination of the coupling B, with body K, having a water-way I, and port *m*, arranged and operating substantially as set forth.

Third, the combination with the plug P, of the ports *m*, *n*, and *t*, arranged and operating substantially as set forth.

No. 53,556.—M. L. BALLARD, Canton, Ohio.—*Carriage Spring, &c.*—April 3, 1866.—The ends of the springs are covered by a slotted cylindrical cap and fastened by the bolt, around which the ends are lapped.

Claim.—The uniting and holding the ends or plates of a spring by means of an independent cap and bolt or rivet, made and applied substantially in the manner and for the purpose described.

No. 53,557.—L. F. BANCROFT, Worcester, Mass.—*Street Sprinkler.*—April 3, 1866—The segment of a cylinder is clamped to the truck by bands and nuts.

Claim.—Making the upper part of the water reservoir A circular and the bottom flat, in combination with the use of the clamping bands L and tightening nuts *f*.

No. 53,558.—S. C. BEDELL, Red Bank, N. J.—*Tool for Trimming Boot and Shoe Heels.*—April 3, 1866; antedated March 30, 1866.—For trimming the exterior curve of the heel. A curved knife set in a shank whose lower end by contact with the lower surface of the heel forms a guide.

Claim.—A tool for trimming boot or shoe heels having the general construction and arrangement herein described, and either with or without an adjustable cutter stock, operated as specified.

No. 53,559.—ALONZO T. BOON, Galesburg, Ill.—*Plough.*—April 3, 1866.—The subsoil plough is at the foot of a post behind the main plough; its depth is regulated by a spiral cam and a rack upon the post.

Claim.—First, the spiral cam C, in connection with the shaft *c*, for operating either a mole or subsoil plough, substantially in the manner and for the purpose herein set forth.

Second, the standards B B, either of the subsoil or mole plough, having a series of notches or teeth *b*, as arranged and used in their connection with the spiral cam and groove of the beam A, substantially in the manner and for the purposes as herein set forth.

Third, the arrangement of the brace bar E, in its relation to the standards, with shackle bar and connecting rod *d*, attached to the beam of the plough, substantially in the manner and for the purpose as herein set forth.

Fourth, the arrangement of the mouldboard F, with the subsoil plough, substantially in the manner and for the purpose as herein set forth.

No. 53,560.—JOHN W. BOUGHTON, Appleton, Wis.—*Car Coupling.*—April 3, 1866.—The coupling pin is supported in an oblique position by a shoulder on the tumbler; the partial rotation of the latter by the link disengages the pin, which falls and couples.

Claim.—The combination of the shouldered-tumbler, obliquely-set coupling pin, and corresponding opening, operating substantially as described and represented.

No. 53,561.—MILTON BRADLEY, Springfield, Mass.—*Social Game.*—April 3, 1866; antedated March 30, 1866.—Called "The checkered game of life;" played by two or more. The divisional squares of the board represent events of life, and the moves are determined by dice or teetotum.

Claim.—As an article of manufacture, the social game, substantially as herein set forth.

No. 53,562.—W. H. BRAMBLE, Decatur, Ill.—*Letter Boxes.*—April 3, 1866; antedated March 30, 1866.—A blow on the platform by the official clerk releases the door, which is raised by the outside party and the letters abstracted.

Claim.—The use of hinged or adjustable doors or lights for post office boxes, when said doors or lights are operated from the inside of the office or box for the purpose of facilitating the delivery of letters as herein specified.

No. 53,563.—LEOPOLD BRANDEIS, Brooklyn, N. Y.—*Manufacture of Bronze Powder.*—April 3, 1866.—Explained by the claim.

Claim.—The production of grains, scrapings, filings, shavings, or borings from copper, tin, and their alloys, by proper tools, like a turning lathe or other tool; to flatten these particles of metal by means of rollers or stampers with polished steel or chilled surface, for the purpose of getting them bright and brilliant to manufacture therefrom bronze powder, in any way used for the purpose of reducing these small flat fragments to still finer ones, always offering a bright surface just the same as if the metal had passed previously through all the processes of repeated hammerings, annealings, rollings, beatings, &c.

No. 53,564.—L. C. BRISTOL, Victor, N. Y.—*Drill Cable Meter.*—April 3, 1866.—The revolutions of the traction wheel of known circumferential extent are registered on a dial.

Claim.—In combination with the drill cable, or its equivalent, of well-boring apparatus, a meter having a traction wheel or pulley, substantially as shown, for the purposes herein set forth.

No. 53,565.—P. K. BRONSON, East Avon, N. Y.—*Ploughshare.*—April 3, 1866.—A projection on the rear of the point enters a dovetail depression in the nose of the share; a vertical set screw passes through and attaches the respective parts.

Claim.—Securing the detachable false point P, to the shares of ploughs by means of the screw bolt S and the dovetail locking lips *a*, *b*, and *c*, substantially in the manner and for the purposes herein set forth.

No. 53,566.—CHARLES W. BROWN, Newark, N. J.—*Step Ladder.*—April 3, 1866.—The ladder is braced laterally by wooden bows.

Claim.—The arched brace of wood, in one piece, spanning the ladder frame, substantially as specified.

No. 53,567.—WILLIAMS R. BURNS, Lancaster, Penn.—*Corn Sheller.*—April 3, 1866.—The continuous sheller bar which extends the whole length of the spiked cylinder is adjustable by slots and set screws. The corn falls from the concave bottom to a shaking screen, where it is subjected to a blast of air.

Claim.—The combination of the adjustable shelling bar, with its slots I I I, and the concave, double-inclined bottom, P^1 P^2, with its opening V, under the spiked cylinder G, together with the vibrating sieve S, shaking attachment L *m* K and D, fan B, and flue C, when these several parts are arranged and operated substantially in the manner described for the purpose specified.

No. 53,568.—CLARK T. BUSH, Rensselaerville, N. Y.—*Carriage.*—April 3, 1866.—The longitudinal bow springs are connected to the axles by devices at their ends; the coupling pole yielding as the relative distance of the axles changes.

Claim.—The arrangement and combination of the side springs *e e*, yielding perch *f*, diagonal braces *h h'*, slot or loop *i*, hinges *p p*, substantially as and for the purposes set forth

No. 53,569.—CHARLES F. CARPENTER, Louisville, Ky.—*Method of Extracting Gold and Silver from Ores.*—April 3, 1866.—The sulphides of the baser metals are converted into oxides by the air introduced through the fire bridge and passed between the flame and the ore.

Claim.—The manner of using atmospheric air for the purpose of facilitating the extraction of gold and silver from ores, causing a separation between gold or silver and the ores of baser metals, and consists in introducing the said atmospheric air between the flame of a reverberating furnace and the ores containing gold or silver which are spread upon the hearth of the furnace.

No. 53,570.—HENRY T. CARTER, Portland, Me.—*Valve Gear for Oscillating Engines.*—April 3, 1866.—The valve chamber rests on the cylinder. and its valve is operated by a rock shaft which connects with the valve by a toothed segment and rack, and by an arm with a stationary link on the trunnion.

Claim.—The rocking valve stem S, arm *c*, in combination with a slotted link upon the trunnion box cap, in the manner and for the purposes herein set forth.

No. 53,571.—ELIJAH D. CASTELOW, Meriden, Conn.—*Means for attaching legs to Music Stool.*—April 31, 866.—The legs are severally attached to the central post by dovetail tenons on the former and corresponding mortises in the latter, a disk securing them in position.

Claim.—The combination of the pillar A B with the blocks, or pieces C, the legs D, and disk *d*, when the dovetails are made to fit, and the disk to hold, substantially as herein described.

No. 53,572.—WILLIAM K. CHASE, Charlestown, Mass.—*Spring Power for Propelling Carriages.*—April 3, 1866.—The wagon is propelled by a spring which is wound up as required by the rider; arrangements are afforded for backing and turning.

Claim.—The springs K K, one or more, applied to a drum I, placed loosely on a shaft E, to which wheels F F are attached, in connection with the pinions D on the hubs *a*, of the hind wheels of the wagon, the ratchets H H and J on drum I, the yokes L L, lever M, and sliding rod N, and the pawls *b b*, on the wheels G G of shaft E, all arranged and applied to operate in the manner substantially as and for the purpose specified.

Also arranging the shaft E, so that it will have a forward and backward movement in its bearing, to admit of the wheels F being moved in and out of gear with the pinions D, when said shaft thus arranged is used in connection with the keys *d d* of the levers P, and the springs K K with their outer ends attached to the frame A, or to a fixture thereof, substantially as described.

No. 53,573.—GEORGE W. CHIPMAN, Melrose, Mass.—*Stair Carpet Pad.*—April 3, 1866.—A cushion to cover the tread of the stair carpet.

Claim.—As a new article of manufacture, the stair carpet pad constructed of one or more layers, consisting of fibrous matter covered on each side with sheets of paper and enveloped in a closed case of textile material, when the whole is quilted at several points through all the materials composing the pad.

No. 53,574.—THOMAS J. CHRISTY, Noblesville, Ind.—*Railway Car Coupling.*—April 3, 1866.—The gravitating coupling latch when struck by the link is pushed to the rear, sufficiently to disengage the upper incline of the latch from a recess in the upper portion of the draw head.

Claim.—The drop latch L, when the same is constructed substantially as shown, with pivotal slot *p*, and inclines *d* and *i*, each performing the offices described, all constituting a self-acting car coupling, as set forth in the foregoing specification.

No. 53,575.—GEORGE CLARK, Buffalo, N. Y.—*Grain Dryer.*—April 3, 1866.—The air tight chamber has a hot blast apparatus, an air exhausting pump, provision for the introduction of cool air, and for the escape of vapor.

Claim.—First, a closed or air-tight grain drying kiln or chamber, combined and operating in connection with air-heating furnaces, and blowing air pumps or fans, for the purpose and in the manner substantially as described.

Second, in the combination with said air-tight grain drying kiln or chamber of an exhausting air pump or fan, operating in the manner and for the purpose set forth.

Third, providing said air-tight grain drying kiln or chamber, having an exhausting air pump combined therewith, with valves or doors, which may be opened to admit cold air therein, for the purpose set forth.

Fourth, the combination with said air-tight drying kiln or chamber of one or more evaporation escape valves G, or other equivalent device, operating in the manner and for the purpose substantially as herein described.

Fifth, in the combination with said air-tight drying kiln or chamber, or with an auxiliary cooling chamber, of a cold air inlet valve or valves H, or other equivalent device, operating in the manner and for the purpose substantially as herein described.

No. 53,576.—James O. Clay, Hudson, Wis.—*Broom Head.*—April 3, 1866.—The two parts are hinged together; the brush being inserted, the closed jaws are locked by the insertion of the handle.

Claim.—First, a broom head or frame consisting of the piece B, having the socket formed thereon, and the piece A, provided with the arms *a* and *d*, fitting in the openings in said socket, said piece being hinged at *b*, as shown and described.

Second, securing the handle in place by means of the projection *c*, and the groove *l* and *e*, arranged and operating as set forth.

Third, the central strip F, in combination with the parts A and B, when constructed and arranged as herein shown and described.

Fourth, forming the teeth on the bars C and D, with their faces standing diagonally, as and for the purpose set forth.

No. 53,577.—Levi H. Colborn, Chicago, Ill.—*Rotary Plough.*—April 3, 1866.—Explained by the claim.

Claim.—First, giving the helical or screw plough blades of a rotary plough, in addition to their screw form, an additional curvature from the periphery toward the centre, beginning at or near the entering edge, and gradually increasing toward the leaving edge, the same being a development of the mould board of the common plough around an axis of revolution.

Second, attaching to a rotary plough blade, at any suitable place thereon, a horizontally projecting cutter, in order to give a horizontal slicing undercut to the furrow, substantially as set forth.

Third, making rotary plough blades adjustable on their propelling shaft, so that they may be set to cut furrows of different widths by attaching two, three, or more blades to the shaft, as set forth.

Fourth, connecting the plough blades to the plough shaft, so that their delivery end shall project in rear of the shaft, and be left free and unobstructed, substantially as described.

Fifth, connecting the plough shaft to the axle of the driving wheels by a loose journal D, so as to allow the plough to vibrate in order to pass small stones and other light obstructions, substantially as set forth.

No. 53,578.—Edward A. Cooper, Lancaster, N. Y.—*Gig Tree.*—April 3, 1866.—Explained by the claim.

Claim.—First, the square raised shank *c'*, on the check hook E, and corresponding mortise in the tree plate, in combination with a binding screw or bolt, as described.

Second, the grooved cantle *b'* and sliding back plate F, combined and operating in the manner and for the purpose set forth.

Third, the terret nuts H, with end lips *h'* and notches i^2, in combination with the end teats *i*, cast on the tree plate, as and for the purpose set forth.

Fourth, riveting the flaps M to the tree plate on each side of the back straps L, as set forth.

Fifth, the tongue K, cast on the back side of the tree plate to secure and hold the pad, in the manner described.

No. 53,579.—Delos V. Crandall, Canton, Iowa.—*Bed Spring.*—April 3, 1866.—The lower portion of the helical coil is received in a hole in the slat, and fastened by a plug.

Claim.—Inserting the coiled wire in the aperture C of the slat B, and fastening it by the stopper D, as herein described and for the purposes set forth.

No. 53,580.—David Cumming, Jr., New York, N. Y.—*Mangle and Wringer.*—April 3, 1866.—The rollers are journaled in a vibrating frame; the pressure is obtained by the contact of circular plates on the lower roller shaft, with an abutment on the frame.

Claim.—The use of the abutments *g g*, in combination with two or more rollers, arranged substantially as described and for the purpose set forth.

No. 53,581.—H. G. Dayton, Maysville, Ky.—*Apparatus for Distilling Spirits.*—April 3, 1866.—The liquid is heated by passing through a coil in a steam chamber, and is discharged by a rose upon a steam jacketed pan; from thence the vapor rises and the remaining liquid descends to the bottom of the still.

Claim.—First, the evaporating pan E, with a steam jacket *d*, in combination with rose H, coil F, steam drum B, and still A, constructed and operating substantially as and for the purpose described.

Second, the annular steam chambers C D, one or more, in combination with the evaporating pan E, steam jacket *d*, still A, and drum B, constructed and operating substantially as and for the purpose set forth.

No. 53,582.—John G. De Coursey, Philadelphia, Penn.—*Bullet for Small-arms.*—April 3, 1866.—A tubular bullet, with an iron lining, a lead exterior, and a disk plate in a countersunk rear to receive the explosion.

Claim.—The within described projectile for small-arms, the same being composed of the central tubular lining of tinned iron, round and to which is cast a leaden exterior, tapering in front as described, in combination with a hard metal washer B, bearing against the rear of the said tube, the whole being otherwise constructed as set forth, for the purpose specified.

No. 53,583.—Clarence Delafield, Factoryville, N. Y.—*Manufacture of White Lead.*—April 3, 1866.—The nitrate of lead is obtained by uniting the oxide of lead, one hundred and twelve parts, with nitric acid, one hundred and twenty-four parts, and water to make a saturated solution.

Claim.—First, uniting or combining a solution of the nitrate of lead, or its equivalent for this purpose, made substantially as described, with a solution of the carbonate of potash, or its equivalent for this purpose, made substantially as described for the purpose of producing the white lead of commerce.

Second, uniting or combining a hot solution of the carbonate of potash, or its equivalent for this purpose, with a hot solution of the nitrate of lead, or its equivalent for this purpose, without regard to the proportions in which the two solutions are made, for the purpose of producing the white lead of commerce.

No. 53,584.—R. H. Dewey and E. N. Tillotson, Pittsfield, Mass.—*Reservoir for Wells.*—April 3, 1866.—A perforated cylinder with its ends closed, and several concentric perforated partitions enclosing a water chamber.

Claim.—In its application as a buried water reservoir in the bottom of a well, the filtering chamber, consisting of a perforated cylinder whose intervening spaces are filled with filtering material, the central space forming a chamber from which the water supply is drawn by an ordinary elevating device, as described.

No. 53,585.—Henry L. De Zeng, Geneva, N. Y.—*Door Latch.*—April 3, 1866.—The check latch has a bolt attached. In addition to the ordinary vertical action of the latch in the notch of the holder, a longitudinal motion of the latch piece engages the bolt with its boxing. A detent on the upper edge of the latch secures it in position.

Claim.—First, the sliding latch A, and bolt B, constructed substantially as specified.

Second, the check latch F, in combination with the cleat D, and latch A, and bolt B, all being constructed and arranged substantially as set forth.

No. 53,586.—Julius C. Dickey, New York, N. Y.—*Rock Drill.*—April 3, 1866.—The central reamer whose exterior cutting edges form the periphery of the holes is enclosed by two bits whose edges are at right angles to those of the reamer.

Claim.—The central drill bit B, made to answer the purpose of a reamer, in combination with the drill bits A and C, substantially as set forth.

No. 53,587.—John Donlevy, New York, N. Y.—*Typographic Printing.*—April 3, 1866.—Explained by the claim.

Claim.—First, the utilizing the spaces between the letters and lines of text left blank in ordinary printing, by filling such spaces, by means of utilizing lines, with a pictorial background, divided into sections and adapted to arrange, alternately or otherwise, with lines of text, spaces, quadrats, &c., substantially as and for the purposes set forth.

Second, the use and application of improved intaglio type, with plain surfaces, which adapt such type to artistically unite with type high spaces, quadrats, and utilizing lines, corresponding to, and when set up, on a level with, the surface of the type, for the purpose of producing stereotype plates adapted for subsequent ornamentation.

Third, the combination of the type, previously described as bas-relief type, with plain surface intaglio type, for the purpose of producing illuminated and polychromatic effect.

Fourth, the combination of plain surface intaglio types with figured surface utilizing lines, or figured surface intaglio types with ornamented utilizing lines, by which is produced a new and useful style of contrast-tint typography, substantially as and for the purposes set forth.

Fifth, the artistic dissection of any pictorial decorative subject in spaces, quadrats, and utilizing lines, and their combination with each other and with letters or lines of letters or texts, so as to reproduce from the whole a typo-pictorial subject, substantially as and for the purposes set forth.

No. 53,588.—D. H. DOTTERER, Philadelphia, Penn.—*Axle Box.*—April 3, 1866.—The upper portion of the bearing slides in the lower. They are adjustable from above by nuts on the screw bolts, and spiral springs on or under the bridge piece.

Claim.—First, fitting the sections of packing of a journal box in such manner that they may be adjusted from the outside of the box, substantially as described.

Second, constructing a sectional packing C D so that the section D may move within the section *c*, in combination with a bridge support E, and springs, which are so applied as to keep such packing in place, substantially as described.

No. 53,589.—J. B. DOW, Davenport, Iowa.—*Pens for Weaning Calves.*—April 3, 1866.—The apartments are provided with feed holes and outside vessels for milk. The larger space has also a feed trough.

Claim.—The calf-weaning and stall-feeding pen, constructed as herein described.

No. 53,590.—F. N. DU BOIS, Black Hawk, Colorado Territory.—*Process for Amalgamating Gold, &c.*—April 3, 1866.—The quicksilver is presented to the particles of gold in the form of an amalgam, which prevents its infinite division and loss by floating off in the process of trituration.

Claim.—The use of an amalgam of gold and mercury, substantially of such consistency as to render it adaptable for the purpose set forth.

No. 53,591.—DANIEL DUNTON, Brooklyn, N. Y.—*Churn.*—April 3, 1866.—The vertical, rotary, open-frame dasher has doubly curved plates, which have a centrifugal or centripetal action on the cream, according to the direction of revolution of the shaft.

Claim.—The rotary dasher B, constructed with an open centre, substantially as shown, in combination with the plates or gatherers *e e*, all arranged substantially in the manner as, and for the purpose specified.

No. 53,592.—SOLOMON DWIGHT, Rockford, Ill.—*Cultivator.*—April 3, 1866.—The handles on the rear beam are adjustable laterally. The plough standards on either beam are adjustable as to angle of presentation, and also laterally. The lower sections of the plough standards are pivoted to the upper to rotate backwardly, to pass obstructions.

Claim.—The combination of the rigid tongue, the curved side pieces, the adjustable rear and middle cross-beams, the adjustable handles, the swivelling ploughs, and the yielding spring corn guard, when constructed, arranged, and operating as described.

No. 53,593.—STEPHEN A. EMERY and FREDERIC A. PRINCE, Portland, Maine.—*Railway Switch.*—April 3, 1866. The approaching car replaces the switch by the contact of one wheel with the wing of a lever, which actuates the switch in advance.

Claim.—First, the peculiar construction of the lever *d*, with wings, in manner above described, or their equivalents.

Second, the peculiar construction of lever *f*, and its adjustment in connection with shoulder *r*, and key *g*, and drop levers *e e*, in manner above described, or their equivalents.

Third, the combination and use of lever *d*, with lever *f*, in conjunction with the wheel of a car or locomotive, operating in the manner above described.

No. 53,594.—AUGUSTUS F. ERICH, Baltimore, Md.—*Apparatus for Draining Cellars.*—April 3, 1866.—This automatic apparatus has an upper cylinder which, in filling with water, discharges its air into another cylinder in the cellar, and drives from the latter the drainage water contained therein. A float in the cellar works the valves and the lower cylinder, so as to alternately fill and empty each cylinder.

Claim.—First, the combination with the stationary vessel A, provided with a pipe leading from the hydrant or other water supply, and with a discharge pipe, of the air-conducting pipe E, vessel G, discharge pipe or pipes H H', and float I, substantially as and for the purposes set forth.

Second, the combination of the spring K with the cocks of the supply and discharge pipes of the vessel A, and the collars F, for giving a positive and distinct motion to the vessel G, when the cocks are reversed, as explained.

No. 53,595.—W. H. FARNHAM, Sparta, Wis.—*Medicine for Asthma.*—April 3, 1866.—Nitrate of potash, one and one-half ounce; skunk-cabbage root, two ounces; thorn-apple leaves, two ounces; belladonna, two drachms; Seneca snake root, four and one-half drachms; sumach berries, two and one-half drachms; lobelia leaves and stalks, three drachms; oil of lavender, forty drops; warm water, half pint.

Claim.—The medical compound of the several ingredients mixed together, in or about the proportions stated, and for the purpose specified.

No. 53,596.—ISAAC FERRIS, Cincinnati, Ohio.—*Steam Engine.*—April 3, 1866.—Cylinder heads are dispensed with. Two pistons move in each open-ended cylinder, alternately towards and from the central steam opening in each. Each piston rod is attached to a piston in each cylinder, one to the outer ones and the other to the inner ones. The connecting rods of the outer pistons pass through stuffing boxes in the inner pistons.

Claim.—First, the open-ended cylinders A A′ B B′ C C′, and pistons D D′ E E′, arranged, connected and operating substantially in the manner and for the purpose set forth.

Second, in this connection, the arrangement of the parts N R R′ and S S′, for operating the valves P Q, substantially as described.

No. 53,597.—JACOB T. FORRER, Peoria, Ill.—*Mash Machine.*—April 3, 1866.—The vertical shaft rotates in a sleeve post, which supports horizontal shafts rotated by bevel gearing in the post.

Claim.—First, the combination of the shaft G and post D with the tub A, substantially as described and for the purpose set forth.

Second, the combination of the shaft B with the shaft G, post D, and tub A, substantially as described and for the purpose set forth.

Third, the combination of the shovels C and arms E with the shaft B and tub A, substantially as described and for the purpose set forth.

Fourth, the combination of the cap or casing O with the shafts G and B, and with the post D, substantially as described and for the purpose set forth.

No. 53,598.—CLINTON T. FROST, Medfield, Mass.—*Grinding Cylinder of Paper Engine.*—April 3, 1866.—The cutting plates which project from the periphery of the cylinder are adjustable radially in their clamps by means of lips on the knives and recesses in the holder faces.

Claim.—The application of the grinding plates *a* to the cylinder of paper engines, in such manner that they may be moved outwardly from its circumference and secured in position, as occasion may require, as hereinbefore explained.

Also, the peculiar construction and arrangement of the plate *a*, and its support *b*, that is with the lip *e* and grooves *f f*, substantially in the manner and for the purpose as above described.

No. 53,599.—GEORGE P. GANSTER, New York, N. Y.—*Rock Drill*—April 3, 1866.—The spool on which the rope is wound has a revolution in the plane of its axis to remove kinks. The drill is raised and dropped by the intermittent contact of a segment-faced wheel which bites the rope against a grooved roller during a part of its revolution, and then lets go.

Claim.—First, the combination and arrangement of the flyer C, ratchet wheel D, pawl O, rock shaft Q, rod T, and a crank S, on the axle S′ of the roller S′, or its equivalent, substantially as and for the purpose herein specified.

Second, in combination with an unyielding roller H, of the construction substantially as herein described, the elastic grooved roller J, constructed and operating in the manner and for the purposes set forth.

No. 53,600—JOHN GEORGE and HENRY HAGUE, Jackson, Mich.—*Brick Machine.*—April 3, 1866.—The tempering arms on the sleeve revolve more rapidly than the central shaft which carries the pressure plate.

Claim.—The attaching of the grinding or tempering arms J of the pug-mill of a brick press to a tubular bar shaft F, fitted loosely on the shaft B, which has the presser attached, and driving said shaft by means of gearing, so arranged that the shaft F will rotate more rapidly than the shaft B, substantially as and for the purpose herein set forth.

No. 53,601.—CHARLES H. GILMAN, Portland, Maine.—*Shutter and Blind Fastening.*—April 3, 1866.—The catch presents a hook in each direction for attachment, open or shut. Packing disks press on the shanks of the hooks and preserve or restore their position.

Claim.—The combination and arrangement as herein set forth of the plate D D, cylinder E, packing B B, bar A, with a catch or staple, all substantially as and for the purpose described.

No. 53,602.—LUCIUS M. GILMORE, Janesville, Wis.—*Rock Drill.*—April 3, 1866.—The drill face consists of radial cutters with intervening spaces for the escape of debris. The lower edge of the sheath is shod with an annular reamer.

Claim.—The drill or built tool E, when constructed and arranged substantially as and for the purpose set forth.

No. 53,603.—SOLOMON GODFREY, Peoria, Ill.—*Grinding Mill.*—April 3, 1866.—The rim has two openings on the respective sides of a flange projecting inward from the rim. A draught of air through the openings is caused by the motion of the runner.

Claim.—The combination of the openings D and E, and the flange C, with the rim A and the runner, substantially in the manner and for the purpose described.

No. 53,604.—J. T. GREENWOOD, Sr., Beloit, Wis.—*Washing Machine.*—April 3, 1866; antedated March 13, 1866.—The lower rollers are pivoted in the crotchets, which are journaled in the sides of the tub; the upper roller is imposed upon them, its pressure being adjustable by levers on its bearings governed by springs and set screws.

Claim.—The crotchets D D, and the application of the regulating device, consisting of the levers E E, screw rods H H, thumb nuts *h h*, plates *i i*, and the springs I I, when constructed substantially as herein described for the purpose set forth.

No. 53,605.—DEMAS L. GROVER, Groton, N. Y.—*Stove Pipe Damper.*—April 3, 1866.—The holes in the movable plate are brought to coincide or otherwise with those in the counterpart plate, by a draught rod which causes a partial rotation.

Claim.—First, the plates C D and B, the pin F, and stays G, when constructed and operated in the manner described, and for the purpose specified.

Second, the handle E, and the connecting pin H, when constructed and arranged in combination with the plates and supports so as to operate in the manner described.

No. 53,606.—JOHN P. GRUBER, New York, N. Y.—*Filtering Apparatus.*—April 3, 1866.—The filtration is assisted by an air-forcing and air-exhausting pump connecting by pipes with the two chambers separated by the filtering substance.

Claim.—First, the combination of an exhausting and forcing air pump with a filtering vessel, which is constructed with a central filtering partition, a movable cover, and with pipes *j k* leading from the chambers E F to the pump chambers, substantially as described.

Second, the combination of the adjustable imperforated cap *h*, with the cylinder *d'*, and partition D *d*, arranged within a vessel A, which communicates with an exhausting and forcing air pump, substantially as described.

No. 53,607.—PEARSON E. GRUGER and JOHN P. GRUGER, Lancaster, Penn.—*Railroad Station Indicator.*—April 3, 1366.—The indicator is operated by machinery that reverses the motion of the rollers when the direction of motion of the car is reversed. Upon the travelling strip are imprinted the names of the stations consecutively; the contact of a rod on the car with a post on the side of the track gives the impulse.

Claim.—The arrangement of the bolt D, springs S S, spring case F, pawls or clicks c^1 c^2, in combination with the reversely-toothed ratchets B^1 B^2 on the same shaft O that carries the cog wheel M, when all these parts are fixed upon a plate A, constituting one end of the box or indicator, transferable from one rod N to the other, and actuated substantially in the manner specified.

No. 53,608.—C. A. GUILMETTE, Boston, Mass., assignor to himself and GEORGE P. TOWLE, same place.—*Photography.*—April 3, 1866.—The edge of the tablet is covered by drapery, &c., to hide the margin.

Claim.—Making a negative from which to print a photographic likeness of a person with a fac simile of an autographic signature, forming part of such photograph, by means of a card or tablet having the signature written upon it and placed upon some part of the person, and so that the autograph shall be taken with the person in the negative picture and without showing the outline of the card or tablet, as hereinbefore specified.

No. 53,609.—FREDERICK HAINSWORTH, Chicago, Ill.—*Rotary Blower.*—April 3, 1866.—The radial series of bellows are arranged around and discharge into a central tube; a heavy block on the outer surface of the bellows membrane rises and falls in guides to fill and discharge.

Claim.—First, the employment of a rotary series of bellows, when arranged and operating substantially as herein described.

Second, in combination therewith the hollow shaft or tube with the removable coupling, when operated for the purpose herein specified and shown.

No. 53,610.—THOMAS HANVEY, Elma, N. Y.—*Preparing Timber for Cutting into Veneers.*—April 3, 1866.—Explained by the claim.

Claim.—Preparing logs or blocks of wood for cutting or slicing into boards, veneers and the like, by the process of steam-boiling in tanks or vats of water, substantially as herein described.

No. 53,611.—JAMES HAYDEN, Philadelphia, Penn.—*Hominy Mill.*—April 3, 1866.—The perforated cylinder is contained in a case and has a vertical toothed shaft, and a succession of floors with marginal holes and hoppers with central openings; the corn is fed in from a vibrating hopper with adjustable slide opening; the beaters in the perforated central shaft create a current of air.

Claim.—First, the combination of the adjustable slide W, with the shaker Q, for regulating the supply of corn from the hopper, the said slide being arranged and operating substantially as described.

Second, the combination of the adjustable slides J with the plates I, for regulating the discharge of the corn through the openings *p*, substantially in the manner described.

Third, constructing the slots *l*, of the cylindrical pieces H, with cutting edges *m*, for removing a portion of the hulls from the corn, substantially as described.

Fourth, the combination of the beaters *i*, and sections of the central shaft B, by means of the screws on the inner ends of the former, and the pins *j*, the several parts being constructed and arranged in relation to each other substantially as described and for the purposes specified.

Fifth, the combination and arrangement of the ventilator S, with the central shaft B, for creating a current of air through the grain compartments, substantially in the manner described and for the purpose set forth.

No. 53,612.—GEORGE E. HAYES, Buffalo, N. Y.—*Vulcanizing Vessel for Dentists' Use.*—April 3, 1866.—The escape of steam indicates the destruction of the lining.

Claim.—A vulcanizing vessel constructed of an outer shell and an inner lining, substantially as herein specified, whereby on the lining being corroded through, steam may escape between it and the shell, as herein set forth.

No. 53,613.—WILLIAM M. HENDERSON, Philadelphia, Penn.—*Steam Engine.*—April 3, 1866.—The valve rod is moved by a tappet on the piston rod near the end of each stroke; two piston heads on the valve rod actuate the annular valve, which is placed between them and slides on the piston rod.

Claim.—First, the union of the valve chest with the steam cylinder in such manner that the roof of the main steam ports is formed by the bottom of the valve chest, in the manner and for the purposes represented.

Second, the connection of two piston heads in a cylindrical valve chest, by a spindle its or equivalent, said heads being united in motion and carrying between them a sliding valve, to which is imparted a stroke less than that of the driving heads, substantially for the purposes specified.

Third, the described arrangement of the grooves V V′ and channels I I, in the piston heads with the passages X X′ in the valve seat, when operating as herein set forth.

Fourth, the arrangement of the air holes K K′ through the piston heads operated by the action of the valve, in the manner and for the purposes herein described.

No. 53,614.—WILLIAM HENSHAW, Spencer, Mass.—*Hay and Straw Cutter.*—April 3, 1866.—The knife has a handle and is pivoted to a frame piece cast solid with the arms and table; the outer end of the knife strikes upon a rubber and a spring rod.

Claim.—First, the cast-iron knife frame G, made in the peculiar manner described, and shown in the drawings.

Second, the combination of the arms F F′, with their ribs or flanges *c c*, with the knife frame G, as shown and described.

Third, the combination with the frame J, of the adjusting screws *k k*, as and for the purposes stated.

Fourth, the combination with the front end of frame G, of the lip *m*, rubber *n*, rod *o*, and spring *p*, as and for the purposes stated.

Fifth, the combination with the frame piece J of the arm F′ and table K, when cast together, as shown and described.

Sixth, the combination of the adjusting screws *g g*. with frame G′, and knife *d*, as and for the purposes set forth.

No. 53,615.—SYLVESTER B. HILL, Chicopee, Mass.—*Paper Bosom Machine.*—April 3, 1866.—The appearance of plaits or ornamental needle-work is given to the paper by counterpart rollers of varying diameters or embossed surfaces.

Claim.—First, forming ornamented shirt bosoms by passing the prepared paper through or between rollers, constructed substantially as and for the purpose set forth.

Second, forming paper shirt bosoms between section rollers so arranged that the change of the relative positions of the sections will vary the ornamental design of the shirt bosom, substantially as set forth.

Third, the combination of an ornamented sectional roller with a solid roller, and thus forming ornamental paper shirt bosoms, and varying their designs substantially in the manner described.

Fourth, the new article of manufacture constituting an embossed paper shirt bosom, made substantially in the manner described.

No. 53,616.—W. D. HILLIS, Elgin, Ill.—*Fence.*—April 3, 1866.—The wire has flattened portions which correspond to the distances between the pickets and round portions on which the pickets are retained.

Claim.—The wire or rod flattened at intervals, as described, for the purpose set forth.

Also, the picket provided with holes E H E, Fig. 6, in combination with the wire C D, substantially as described.

Also, the mode of fastening the stringers, by means of their bent ends in a ring I, secured by the spike, substantially as described and represented.

No. 53,617.—BIRDSILL HOLLY, Lockport, N. Y.—*Steam Generator*—April 3, 1866.—The roof of the fire chamber has pendent water pockets, and is sustained by brace rods from the crown plate. A water jacket surrounds the fire chamber, and connects by flue pipes with the annular flue around the water and steam chamber.

Claim.—The combination and arrangement of the vertically pendent tubes C C, with the furnace B, flues *d d*, and water jacket *a*, substantially in the manner and for the purposes described.

No. 53,618.—ALBERT H. HOOK, New York, N. Y.—*Stave Machine.*—April 3, 1866.—The stave is so clamped by a back and bridge piece that the jointing circular saws may traverse its edges, and the other tools may prepare its chine and croze.

Claim.—The clamp so constructed as to enable the jointing tools and the howelling, crozing, and chamfering tools to perform their office upon the stave, without removing the stave from the clamp, said clamp being constructed for these purposes, substantially as herein set forth.

No. 53,619.—JAMES A. HOUSE and HENRY A. HOUSE, Bridgeport, Conn.—*Button-hole Cutter.*—April 3, 1866.—The pliers have a concealed spring in the joint; one jaw carries an adjustable plate, and the other a pivoted cutter, moved by a lever and adjustable to a scale of angles.

Claim.—First, the axially adjustable cutter substantially as described for cutting button-holes at any desired angle to the selvage.

Second, the combination of the axially adjustable cutter in one jaw of the pliers with the adjustable plate in the other jaw of the pliers, when both are removable, to cut button-holes of varying size, substantially as set forth.

No. 53,620.—TYLER HOWE, Cambridgeport, Mass.—*Folding Bedstead.*—April 3, 1866.—The pivoted legs are maintained in vertical position by an angular brace.

Claim.—The combination of the brace C, constructed substantially as described, with the rail A, the leg B, and cross-brace E, the whole being arranged in manner, and so as to operate together as specified.

No. 53,621.—EDWIN HOYT, Stamford, Conn.—*Water Elevator.*—April 3, 1866.—The crank is loosely pivoted to the shaft, and is capable by the engagement of its lug of revolving the wheel, or by frictional contact of its brake surface with the periphery of the wheel of regulating its speed when the bucket descends.

Claim.—First, the friction wheel D, having either a beveled or plain periphery, in combination with the brake on the end of the crank F, constructed and arranged substantially as described.

Second, the brake *c* on the end of the crank F, in combination with the friction wheel D, pin E, and plate B, and windlass A, substantially as specified.

Third, hanging or pivoting the crank F on a pin E, which is secured loosely in the friction wheel D by the plate B, whereby the crank and pin revolve together for adjusting the brake to the required position for arresting the velocity of the windlass, substantially as specified.

Fourth, the recesses and arms *e* in the friction wheel D, and inclined as shown, substantially as and for the purpose specified.

Fifth, the lug *d* on the crank F as arranged in relation to the recesses and arms *e* in the friction wheel D for rotating the windlass, substantially as herein specified.

Sixth, the rod G attached to the pawl C, when arranged as described, and used in combination with the projection *c* on the crank.

No. 53,622.—THOMAS S. HUDSON, East Cambridge, Mass.—*Pen.*—April 3, 1866.—A tubular guard slipping on the barrel of the holder slides against the ruler edge.

Claim.—As an improvement thereon the application of the ruler guard A to the pen carrier *b*, by means of a tube B to encompass and slide on the said carrier, such tube being furnished with a slot *c*, or its equivalent, to operate with a stop *d*, projecting from the carrier, as set forth.

No. 53,623.—JAMES G. HUNT, Cincinnati, Ohio.—*Lamp Burner.*—April 3, 1866.—This burner is designed to dispense with a chimney, and to collect and burn the vapor ascending from the oil reservoir. The wick-raising tube has a wooden head.

Claim.—First, the construction, arrangement, and combination of the shell A *a g*, diaphragm D *c*, tube G, wick tube E, and lamp collar C, substantially in the manner described.

Second, the construction, arrangement, and combination of the diaphragm D *c*, lower perforated portion *a*, of case A and tubes G E, all applied to the collar C of the lamp, substantially in the manner described.

Third, the wood button P, in combination with the wick adjuster of a lamp burner, substantially as described.

No. 53,624.—JOHN E. HUNTER, Mechanicsburg, Ohio.—*Broom-head.*—April 3, 1866.—The buts of the brush are received in a cap piece, and lower down they are clamped between toothed jaws, with a lateral support for the broom handle in the cap.

Claim.—The construction of the case for receiving the broom-corn, in combination with the toothed jambs or rings C and support F, attached to the side of the said ring, substantially in the manner and for the purpose set forth.

No. 53,625.—THOMAS H. JENKINS., New York, N. Y.—*Process for Making Steel.*—April 3, 1866.—Red hot malleable cast-iron is plunged in a solution of sulphuric acid, sal ammoniac, glauber salt, common salt, and water. It is melted with an equal quantity of Swedish charcoal iron, and small quantities of black oxide manganese and common salt in a crucible, cast into ingots, and treated in the ordinary manner.

Claim.—The process of making steel by using what is known as malleable cast-iron, which has been subjected while in the heated state to the action of a solution, substantially such as described and melting it in admixture with wrought iron in a crucible or equivalent therefor, substantially as described.

No. 53,626.—WATSON KENDERDINE, Lumberville, Penn.—*Washing Machine.*—April 3, 1866.—The cone-shaped fluted rollers revolve and rotate by contact with the clothes on the adjustable ridged concave beneath.

Claim.—First, the combination of the rotary cylinder A, with its surface of cone-shaped fluted rollers C, and the adjustable concave G, operating substantially as described.

Second, raising the concave G, by means of the lever O, rods N and L, and cross-bar M, or their equivalents, substantially as described.

No. 53,627.—MARTIN C. KILGORE, Washington, Iowa.—*Stop Cock.*—April 3, 1866.—Explained by the claim.

Claim.—A stop cock in two halves, united by screws or bolts for holding the parts together or loosening them, and having the plug through which the fluid passes made straight, and with a groove or V in its surface to prevent its moving endwise, with lining in the box of soft metal, having on it a projection answering to the groove or V in the plug.

No. 53,628.—Suspended.

No. 53,629.—N. W. KINGSLEY, New York, N. Y.—*Blow-pipe.*—April 3, 1866.—An inner plate, operated by an exterior trigger, affords the means of collapsing the elastic gas tube in the blow-pipe, diminishing its sectional area.

Claim.—A blow-pipe, having a valve for regulating the supply of gas thereto, arranged and operating substantially in the manner and for the purpose described.

No. 53,630.—ELISHA Y. KNEELAND, Buffalo, N. Y.—*Piston for Deep Well Pump.*—April 3, 1866.—The periphery of the plunger has a succession of packing cups and sleeve rings; the lower edges of the latter press upon the inturned edges of the former, and afford bases for the cups above. The valve in the plunger has a succession of packing disks which slide upon the axial rod.

Claim.—First, a piston valve, constructed in sections B B' B^2, with intermediate leather crown packing *f* and guiding rod *h*, for the purposes and substantially as described.

Second, the arrangement of two, three, or more leather packing cups A, with corresponding compressing or holding rings E, in combination with the piston, so that when the two parts of the piston are screwed together the rings will be successively pressed upon the flanges of the packing cups, and held in place, for the purposes and substantially as described.

No. 53,631.—EDWARD H. KNIGHT, Washington, D. C.—*Process for Moulding Articles from Paper Pulp.*—April 3, 1866.—The pulp is collected upon a foraminous surface, through which the water passes as the air is exhausted from the interior of the "former." The sheet of pulp is discharged by the internal pressure of air; the bulb handle with valves being the pneumatic agent.

Claim.—The process of making boxes and other hollow paper articles, substantially as described.

Also, in the process of manipulating paper pulp, and in combination with the former, possessing the described functional character, an air forcing or exhausting device, operating substantially as described.

Also, in combination with a former, constructed to operate substantially as described, an elastic hollow handle provided with a valve guarded opening or openings.

Also, a seamless box, or other receptacle lid, lamp shade, or other hollow paper article, made directly from pulp, upon a pervious former, in connection with an artificial draught and blast of air, or other fluid.

No. 53,632.—WILLIAM W. KNIGHT, Philadelphia, Penn.—*Chamber Bucket.*—April 3, 1866; antedated March 23, 1866.—The seat, with its downward projecting flange, is supported on the bucket; when removed, a cover is substituted whose rim enters the water in the annular trough and makes a tight joint.

Claim.—The seat D, with its plate E, adapted to and combined with the slop can A and its plate *b*, in the manner described.

No. 53,633.—SUSAN KNOX and W. D. CORRISTER, New York, N. Y.—*Fluting Machine.*—April 3, 1866.—The bearings of the upper roller are in a hinged frame, which is adjustable vertically by a lifting lever and depressing springs.

Claim.—A fluting machine, having the upper roller hung in a horizontal spring swinging frame, substantially in the manner described for the purpose specified.

No. 53,634.—CASPER W. LAMB, Columbia City, Ind.—*Portable Feed Rack.*—April 3, 1866.—This portable rack and shed shelters its contents and preserves from waste by the stock, which are excluded while filling; the roof may be levelled to form shearing tables.

Claim.—The combination and arrangement of the different parts of the farm-stock portable feed rack and shed, substantially as described and illustrated.

No. 53,635.—JAMES N. LANE, Bethel, Ky.—*Seed Planter.*—April 3, 1866.—Diagonal scrapers, dependent from the rear of the frame, cover the seed, which is dropped from the boxes by the lateral motion of the middle handle.

Claim.—First, the scrapers I, when hinged to the frame, and disposed diagonally to the line of draught, substantially as set forth.

Second, the arrangement of a seed planter for one horse, with seed valves, operated by hand when the parts are constructed and combined substantially as set forth.

No. 53,636.—JESSE LEWIS and ISAAC STANWOOD, Gloucester, Mass.—*Purifying Isinglass.*—April 3, 1866.—The membranes are washed in cold water, boiled, and scummed.

Claim.—Separating from the swimming bladder or sound of the hake, or other fishes from which isinglass is usually prepared, the impurities by boiling, substantially as and for the purpose set forth.

No. 53,637.—JOHN R. LOMAS, West Haven, Conn.—*Hinge.*—April 3, 1866.—The plate, secured to the door, has a horizontal segment which fits and traverses in a counterpart groove in the flat portion of the plate attached to the post.

Claim.—A hinge, constructed substantially as herein set forth.

No. 53,638.—OSCAR LOW, Chelsea, Mass.—*Tag Needle.*—April 3, 1866.—The eye of the needle may be opened to the rear by so forcibly drawing the thread as to spring open the elastic piece which forms one side of the eye.

Claim.—An improved tag needle, made substantially in the manner and for the purpose as above set forth.

No. 53,639.—ALPHEUS A. LUSK and SAMUEL A. WELLS, Wooster, Ohio.—*Car Coupling.*—April 3, 1866.—When not coupled the hook is nearly erect, so as to readily fall into coupling position.

Claim.—A projection at the eye of the hook to prevent it from falling entirely back, so that it will couple in any position.

No. 53,640.—WALTER K. MARVIN, New York, N. Y.—*Manufacture of Steel for Safes.*—April 3, 1866.—The chrome ore, consisting of protoxide of iron, oxide of chromium, alumina, and silica, is treated with fluxes, and the alloy of iron and chrome obtained is melted with charcoal, pig iron, and wrought iron.

Claim.—First, as a new metal or alloy the composition herein described, the same consisting of chromium, cast iron, and wrought iron, compounded in the manner and proportions hereinbefore set forth.

Second, the construction of safe boxes, vaults, doors, and other burglar-proof structures, by casting the same of the metal hereinbefore described.

No. 53,641.—JAMES A. MATTOCKS, Swansboro', N. C.—*Distilling Pine Wood.*—April 3, 1866.—The billets of wood are packed vertically in a box, which is then placed in the retort; the grate is vertically adjustable, to act first upon the wood and afterwards upon the tar.

Claim.—The construction and arrangement of a retort, protected by sheet iron or other material, furnaces, flues, sliding grates, and the application of heat to the upper surface of the tar, as shown in the accompanying drawings and specifications.

No. 53,642.—W. D. MAYFIELD, Ashley, Ill.—*Machine for Cutting and Stoning Peaches.*—April 3, 1866.—The peaches are fed between wheels with corresponding concave faces and drawn against knives which open the peach, and deliver the halves and the stones at different places.

Claim.—First, the feed wheels *t* and *u*, in combination with the knives or cutters *a' a'*, arranged with regard to each other, and operating substantially in the manner described.

Second, the wedge-shape ends to the knives, for the purpose specified.

No. 53,643.—CHARLES MCBURNEY, Roxbury, Mass.—*Manufacture of Hard Rubber.*—April 3, 1866.—The waste rubber, as described in the inventor's patent of August 20, 1861, is combined with crude rubber, sulphur, and lampblack.

Claim.—The use of waste rubber for the production of hard rubber, as set forth.

No. 53,644.—WILLIAM C. MCGILL, Cincinnati, Ohio.—*Flour Sifter.*—April 3, 1866.—The scraper has two flanges which determine its position on the vibrating arm, and its pliability allows it to show a convex front surface as it is reciprocated over the foraminous concave.

Claim.—The arrangement of vibrating sweep I, with flexible and jointed scraper J, and concave sieve B, substantially as set forth.

No. 53,645.—JOHN MCROBERTS, New Orleans, La.—*Soap Mould.*—April 3, 1866.—Explained by the claim.

Claim.—The mould, constructed of two parts G H, of V-form in their transverse section and placed in an inclined position so that said parts, when in contact, will form a rectangular box having an inclined position and resting on one angle or corner, the upper part H being movable, and all arranged to operate in the manner substantially as and for the purpose set forth.

No. 53,646 —JAMES A. MEANY, Brooklyn, N. Y.—*Bleaching Stained Cotton.*—April 3, 1866.—Explained by the claim.

Claim.—The process of cleaning and bleaching stained cotton by passing it through solutions of soda ash and of chloride of lime, and rinsing it after each operation in cold water and in vinegar and water, in the proportions and manner substantially as herein described and for the purposes set forth.

No. 53,647.—DUSTIN F. MELLEN, New York, N. Y.—*Machinery for Shaving Wood Screws.*—April 3, 1866; antedated March 14, 1866.—The headed blanks assume their proper position with their shanks occupying the channel between the base of the polygonal pyramid and the hopper bottom; traversing pins push the blanks into a feeding channel and into the pockets of a vertical cylinder from whence they are delivered by a curved spout to the jaws of a feeding arm for presentation to the shaving apparatus.

Claim.—The inclined hopper, having a channel of polygonal form at the base to receive the blanks from the hopper, as and for the purposes described.

Also, the employment of pins *r*, working on sliding plates in the disk Fig. 6, and sweeping around in the polygonal recess in the hopper to carry around the screws therein, substantially as described.

Also, the cylinder *t'*, grooved as herein specified, and the fingers *x*, in combination therewith, as and for the purposes described.

Also, the curved spout *y* and spring jaws *z*, for delivering the screw blank to the feed arm *a'*, as herein specified.

Also, the feed arm *a'*, and the apparatus connected therewith for receiving the screw blank from the jaws *z*, and delivering it to the spindle *c'*, constructed, arranged, and operated substantially as and for the purposes herein set forth.

Also, the adjustable shaving apparatus, gauged and operated as herein specified.

Also, the revolving cross arm *f'*, and spring claws, or their equivalent, for stirring up the screw blanks in the hopper of the feed apparatus, for the purpose set forth.

No. 53,648.—DUSTIN F. MELLEN, New York, N. Y.—*Machine for Nicking Screws.*—April 3, 1866; antedated March 21, 1866.—Forceps receive the blanks from the feeding apparatus and present them to the dies which are arranged between intermittingly revolving disks: these carry the blanks past an adjusting guide and present them to the saw, which is arranged in a vibrating adjustable frame, and is moved up to the blank by cams.

Claim.—The combination of the piston rod *d* and directing forceps *p* employed with the feeding apparatus, as described for feeding the screw blanks to the gripping dies, as specified.

Also, the gauge plate *s*, to determine the exact radial projection of the screw blank from the face of the dies when brought to the cutter in combination with the gripping dies *c*, herein described.

Also, the vibrating adjustable frame *l*, in combination with the holding dies, as and for the purposes described.

Also, the combination of the friction clutch *w*, spring *y*, ratchet and stop v^2, for setting the clamps accurately, as herein specified.

No. 53,649.—CHARLES MILLAR, Utica, N. Y.—*Handle for Milk Cans, &c.*—April 3, 1866.—The fixed portions with vertical loops are designed to be hooked on to the tackle rope; the hinged handles have a horizontal presentation to be grasped by two persons, and afford, when down, objects for the attachment of stay straps.

Claim.—In combination with a milk can, the handles *c* and *d*, constructed and applied substantially as described, whether the handle *d* be hinged at *h*, or be made solid and immovable at its connections, *h* and L.

No. 53,650.—GEORGE MILLER, New York, N. Y.—*Machine for Cutting Files.*—April 3, 1866.—The upper end of the cutter abuts against a spiral spring within a socket depending from a vertically adjustable transom. The blank bed is fed by racks and pinions on the respective sides.

Claim.—First, the combination and arrangement of the chisel stock with the recoil springs, socket bearing and springs connected with the adjustable transom, operating substantially as and for the purpose herein shown and described.

Second, the combination and arrangement of the spindles B J with the feed motion, chisel stock, and rack and pinions, or their equivalents, as specified, and operating substantially as and for the purpose herein shown and described.

No. 53,651.—PATRICK FRANCIS MILLIGAN, Washington, D. C.—*Railway Signal.*—April 3, 1866.—Chains are attached to the rails so that the washing away or deflection of the track works a signal lamp.

Claim.—In combination with the frame-work on both sides of the railroad track, the chains S and X, and their supporting pulleys and bolts, whereby they are attached to the timber supports beneath the railroad track, the whole constructed and arranged as herein described and set forth.

No. 53,652.—HENRY C. MOODY, Fulton, N. Y.—*Washing Machine.*—April 3, 1866.—The adjustable rubber block is reciprocated on the surface of the roller bed in the standard portion.

Claim.—The arrangement, construction, and combination of the levers G, the self-adjusting rubber F, the side rollers E, and guides D, as herein described and for the purposes set forth.

No. 53,653.—C. MOUL, Hanover, Penn.—*Harvester Rake.*—April 3, 1866.—The rake arms are pivoted to a horizontal revolving crown wheel and have independent motions as they revolve around the central post, which is planted on the inner end of the platform. During their revolution they vibrate intermittingly to sweep the grain from the platform and then rise out of the way of the draught frame.

Claim.—First, applying the rakes and the reel arms to short radial shafts *g'*, all of which have independent movements of each other upon a revolving crown wheel *d*, substantially as described.

Second, giving an intermittent oscillating motion to each one of the shafts *g'*, by means of toothed segments *h*, and fixed segments G L, said segments being constructed with flat bearing surfaces h' t^2, t^4 for holding the rake and reel arms whilst passing over the platform and also over the draught frame, substantially as described.

Third, the combination of the anti-friction roller *t'*, with the plane surface, *t'*, of the toothed segment L, and the flat surfaces of the oscillating segments *h*, substantially as described.

Fourth, the combination of the upper and lower toothed segments with the intermediate revolving crown wheel *d*, and the independent oscillating shafts *g'*, substantially as described.

Fifth, the construction and arrangement of the segment h h', substantially as described.

No. 53,654.—JACOB H. MUMMA, Harrisburg, Penn.—*Broom Head.*—April 3, 1866.—The metallic case has a socket to receive the handle and two jaws with teeth, and respectively provided with an arm and a sleeve which unite when the jaws close; adjustable straps confine the brush lower down.

Claim.—First, the combination of the jaws B B with the case A, one of the said jaws being hinged to the case as represented, and one provided with an arm and the other with a sleeve, substantially as and for the purpose herein specified.

Second, the bars C C and D D, constructed so as to form a joint for expanding to suit the broom.

Third, the combination of the jaws B B with the bars D D and C C, when constructed and used as and for the purpose herein specified.

No. 53,655.—L. B. MYERS, Elmore, Ohio.—*Stopper for Bottles.*—April 3, 1866.—The prolonged end of the tube which passes through the cork forms a spout; it is enclosed by a cap, and a trough runs the drip back into the spout.

Claim.—First, the discharge spout A, constructed substantially as specified, whether it be independently made and fitted to the article with which it is used, or formed with the article as a part of it, substantially as specified.

Second, the cap C, in combination with the spout A, applied substantially as and for the purpose specified.

No. 53,656.—ROBERT NEWALL, Marietta, Ohio.—*Method of Deodorizing Petroleum.*—April 3, 1866.—Treated with a solution of chloride of lime, soda ash, and carbonate of lime in water.

Claim.—Deodorizing petroleum and other hydro-carbons by treating and washing them with a solution of lye containing chloride of lime, soda ash, and common lime, or their several equivalents, in the proportions above stated, substantially as above described.

No. 53,657.—WILLIAM NORMAN, New York, N. Y.—*Press.*—April 3, 1866.—The roller at the upper end of the long arm of the toggle slips in a guide slot as it is drawn by the rope which unwinds from the roller above the press and winds upon the winch roller. The power increases as the arms assume a more erect position, which is maintained by pawl and ratchet.

Claim.—The toggle joint H G, slots or guides *g*, pulleys J K, axles I and *a*, spur wheels *d f*, and cords or ropes L N R, all arranged with reference to each other and to the pressing box C, substantially as herein set forth for the purpose specified.

No. 53,658.—JOHN W. NYSTROM, Philadelphia, Penn.—*Apparatus for Refining Iron.*—April 3, 1866.—The barrel is coated with fire-proof material and is supported at one end upon friction rollers, and at the other upon a hollow trunnion, through which air is introduced, to be conducted by tuyere boxes into the interior. The barrel is tipped to present its spout to receive the moulten iron from the furnace and is then closed; air is forced in through the tuyeres to refine the metal, which is discharged eventually at an opening below and received in the moulds which are successively presented beneath.

Claim.—First, the herein-described method of an apparatus for refining metals so that the oxidizing blast shall be admitted into the converting furnace under the moulten mass, at elevations, with respect to the surface of the metal, higher as the work of refining progresses, sa set forth.

Second, in a converting furnace constructed and operating as herein described, forming the tuyeres of an oblong or rectangular sectional area at the point where they enter the furnace, substantially as and for the purposes set forth.

Third, in a converting furnace constructed and operating as herein described, forming the tuyeres of a curved form, substantially as and for the purposes herein set forth.

Fourth, the combination with the converting furnace, constructed and operating as herein described, of cranks and friction wheels, substantially as and for the purposes specified.

Fifth, the employment, in connection with a converting furnace constructed and operating substantially as herein described, of movable ingot moulds, so as to allow of their being brought under the furnace, in the manner and for the purposes set forth.

Sixth, forming the ingot moulds of Z-shaped pieces, substantially as and for the purposes specified.

Seventh, clamping the moulds together successively, substantially as and for the purposes herein explained.

Eighth, the lining of the inside of the converting vessel and also of the ingot moulds, with a composition of silicate of oxide of iron and fire clay or plumbago, as described.

No. 53,659.—THOMAS O. OLIVER, New York, N. Y.—*Stopper for Jars and Bottles.*—April 3, 1866.—The annular packing is retained by the peripheral flanges of the disks, and is expanded outwardly by their approach; a staple in the lower disk passes through a slot in the upper one, and is engaged by a cam.

Claim.—The combination of the eccentric A, with arm *a* attached, with the staple C, firmly attached to the lower disk E of the stopper, substantially as described and for the purpose set forth.

No. 53,660.—JOHN K. O'NEIL, Kingston, N. Y.—*Horse Hay-fork.*—April 3, 1866.—The suspension of the implement may be changed from one arm of the right-angled lever to the other; in one condition the tines of the fork are projected, retaining the hay; the change in the point of suspension lets the bars slide, rotates the tines, and discharges the load.

Claim.—The right-angled or bent lever D for producing the sliding movement of the slide bars on the main bar to open and close the barbs B B, arranged and operating substantially as herein specified.

Also, the arrangement and combination of the operating tackle and angular lever in such a manner as to shift the suspension of the instrument from one arm of the angular lever to the other, substantially as and for the purpose herein specified.

Also, the jointed hook H, constructed, arranged, and operating in combination with the angular lever and operating tackle, substantially as and for the purpose herein set forth.

No. 53,661.—George Osterheld and Rudolf Eickemeyer, Yonkers, N. Y.—*Machine for Blocking and Shaping Hats.*—April 3, 1866.—The operating parts perform their functions automatically by connection with gearing below; the hat block below and the bending shell above are simultaneously actuated toward and from the holding plate which sustains the hat; the tip flattener rotates and reciprocates in the hollow bending shell.

Claim.—First, the bending shell H, applied and operating in combination with the hat block D, and with suitable means of holding the brim of the hat, substantially as and for the purpose herein described.

Second, so applying the holding plates for clamping the brim of a hat in a hat-shaping and blocking machine that they are opened and closed automatically by the operation of the machine, substantially as herein described.

Third, so applying and operating the banding shell and the holding plates as to produce the overstretching of the hat body in height or depth, preparatory to the entrance of the block, substantially as herein specified.

Fourth, the banding ring *b* applied within the holding plate, and operating in combination with the banding shell H, substantially as herein described.

Fifth, the tip flattener applied and operating in combination with the hat block, substantially as herein specified.

Sixth, making the tip flattener with a convolute face, substantially as and for the purpose herein set forth.

No. 53,662.—Edmund W. Packer, Paulsborough, N. J.—*Implement for Setting Out Plants.*—April 3, 1866.—Tongs attached to the staff hold the plant in position; pressure on the staff forces it into the ground; the descent of the ram packs the earth about it.

Claim.—The combination of the shaft A, tongs D D, and ram F, when arranged together so as to operate substantially in the manner described, for the purpose specified.

No. 53,663.—C. S. Pangborn and George W. Beers, Onargo, Ill.—*Cultivator.*—April 3, 1866.—The four ploughs are adjustable vertically, and the middle ploughs laterally; the latter are swivelled to the front bar of the frame and vibrated by one pair of treadles, other treadles giving the vertical movement.

Claim.—The combination of the treadles L L, plough beams G G, swivel sockets H H, arms J J, treadles O O, and frame D, constructed and arranged to operate in the manner as and for the purpose herein specified.

No. 53,664.—George Partridge, St. Louis, Mo., and David M. Johnson, of Coshocton, Ohio.—*Horse-power.*—April 3, 1866.—The master wheel is connected optionally by pinions with the walking beam for drilling, or with the winding pulley for withdrawing the drill.

Claim.—The master wheel B, and sweep C, attached to the upright shaft A, in combination with the horizontal shaft E, provided with the bevel pinion D, and the crank pulley F, connected with the walking beam G, all arranged to operate in the manner substantially as and for the purpose set forth.

Also, in combination with the parts above specified, the horizontal shaft I, arranged with an eccentric collar K, or its equivalent, for the purpose of throwing the pinion J in and out of gear with wheel B, substantially as and for the purpose set forth.

No. 53,665.—Oliver Pearl, Lawrence, Mass.—*Weft Bobbins.*—April 3, 1866.—The bulbous end prevents the breaking of the yarn by friction on the surface of the barrel; the grooves retain the remainder cone of yarn in place.

Claim.—The combination of the enlarged or bulbous end of a filling bobbin with the barrel of the bobbin, as herein described and for the purpose set forth.

Also, in combination with the enlarged end of the bobbin, the grooves or rings cut into the barrel at intervals to prevent the yarn from slipping from the bobbin when in motion in the shuttle.

No. 53,666.—D. J. Peer. Rochester, N. Y.—*Dental Vulcanizing Heater.*—April 3, 1866.—The head is secured to a collar on the heater by means of pivoted bolts and screw nuts; a circular flange on the plate compressing the packing in the groove of the collar.

Claim.—Two or more clamping bolts B, in combination with the head and boiler of dentists' vulcanizing heaters, said bolts being constructed, arranged, and operating substantially in the manner and for the purposes herein shown and described.

No. 53,667.—D. J. Peer, Rochester, N. Y.—*Vulcanizing Flask.*—April 3, 1866.—The "nowel" has pivoted bolts which are received within recesses in the "cope" and upper plate and secured by screw nuts.

Claim.—In combination with the nowel N, plate P, cope B, or its equivalent, the swinging or pivoted bolts *b*, arranged and operating substantially in the manner and for the purposes shown and described.

No. 53,668.—GEORGE G. PERCIVAL, Brooklyn, N. Y.—*Secondary Electric Piles.*—April 3, 1866; antedated March 9, 1866.—Layers of pulverized gas carbon, separated by a porous plate, are substituted for the ordinary metallic plates.

Claim.—The forming of the electrodes of a secondary pile of layers of gas carbon, or some other conducting powder, substantially as and for the purpose hereinbefore described.

No 53,669.—GEORGE G. PERCIVAL, Brooklyn, N. Y.—*Electrical Lamp.*—April 3, 1866; antedated March 9, 1866.—The charged voltaic pile beneath the lamp is the means of lighting when an electric circuit is completed.

Claim.—First, the attachment to a lamp, or to the base or fixtures thereof, of a secondary pile which will store up and retain galvanism until given off from time to time, as may be required, for the purpose of lighting the lamp, substantially as hereinbefore described.

Second, the attachment to a lamp, or to the base or fixtures thereof, of a helix of insulated wire, or its equivalent, forming part of the primary circuit of the secondary pile, when this helix is used to increase the spark produced by breaking this circuit, and the spark is used to light the lamp.

No. 53,670.—CHARLES L. PIERCE, Buffalo, N. Y.—*Sawing Machine.*—April 3, 1866.—The saw bar is supported at its rear end by a rocking slide having the same axis of motion as the crank and slotted cross-head in which the crank pin works and gives motion to the saw.

Claim.—First, supporting a drag saw bar A at its rear end by a rocking slide bar C, whose axis is in line with the axis of the driving crank, in the manner and for the purpose set forth.

Second, the combination of the slide bar A, arranged as stated, with the driving crank and slotted cross-head, in the manner and for the purpose set forth.

Third, supporting the saw bar A at a point between the driving crank and saw by the adjustable guide box E′, and adjusting rack frame F and pinion F′, for the purpose and substantially as described.

Fourth, the combination of the windlass I′ and friction clutch L^5 L^6, with the pulley K, sliding chock H′, and buffer guide post L, arranged and operating in the manner and for the purpose set forth.

No. 53,671.—GUSTAVUS D. PIKE, Chatham, Conn.—*Spring Lever Clasp.*—April 3, 1866.—The spring lever, which is pivoted to the frame, shuts between ears and binds the strap upon the toothed bar of the frame.

Claim.—The employment of the spring lever 2, and the ears *d d*, and the teeth E E E, or their equivalents, combined with the strap-hole *a* and the riveting of clasp to strap, for the purposes specified.

No. 53,672.—JOSEPH L. PIPER, Winthrop, Mass.—*Tree Protector.*—April 3, 1866; antedated March 30, 1866.—The rebated wooden frame encircles the tree trunk and the glass slides underneath, by refusing a foothold, prevent the transcursion of the insects.

Claim.—The said improved tree protector, as made, of the platform, to be applied to the trunk of a tree, and with the strips of glass arranged in such platform, substantially in manner as herein before set forth.

Also, the platform, as made, with the rebate and the saw kerf or recess arranged on and around it, substantially in manner and for holding the plates of glass, as specified.

No. 53,673.—PETER QUINN, Philadelphia, Penn.—*Railway Frog.*—April 3, 1866.—The main rail is uncut, and the cars are carried across by pivoted frog rails or short sections which act as inclines and bridge pieces.

Claim.—A frog rail or rails adapted to the main rails of a railroad and to those of turn-out, and operating substantially as and for the purpose herein set forth.

No. 53,674.—PETER QUINN, Philadelphia, Penn.—*Railway Switch.*—April 3, 1866.—The main rail is preserved intact by causing the switch rail to overlap it instead of mere side contact with it.

Claim.—The switch rails D and D′, when connected and operating together, as described, and when the inclined switch rail D bears on the top of the main rail A, when it is necessary to transfer the cars from the main track to the turn-out, all as set forth.

No. 53,675.—PETER QUINN, Philadelphia, Penn.—*Combined Switch and Frog for Railways.*—April 3, 1866.—The pivoted frog piece forms an incline and bridge for transporting the flanges of the car wheels over the main rail.

Claim.—The combination, substantially as described, of the movable frog rail G, arranged to rest on one of the main rails with any suitable switch rails, the whole operating together as set forth.

No. 53,676.—GEORGE RACE, Norwich, N. Y.—*Water Elevator.*—April 3, 1866.—By the motion of the supplementary frame a new set of gearing is brought into action, which rotates the drum more rapidly in lowering the bucket.

Claim.—First, a water elevator having a supplementary frame, operated and constructed as shown and described.

Second, in combination with the supplemental frame, the system of gearing, as shown, and so arranged and operated that the bucket can be lowered rapidly by a forward movement of the crank.

Third, in combination with the supplemental frame, the brake lever, the hand rest, the spring pawl, and the adjustable friction band, all construectd and arranged as decribed and for the purposes set forth.

No. 53,677.—LUDWIG REICH, New York, N. Y.—*Cooler for Brewing and Distilling.*—April 3, 1866.—The upper and lower portions of the cooling chamber are connected by vertical tubes and surrounded by a water jacket supplied by a pipe with ice-cooled water from above. The cooler has a central bottom discharge.

Claim.—The pan E, tubes F, and box G, communicating with each other and provided with the cold-water vessel A, and with or without the ice chamber J, all arranged substantially as and for the purpose herein set forth.

No. 53,678.—HENRY REIMAN, Brooklyn, N. Y.—*Box for Cigar Fuzes.*—April 3, 1866.—Explained by the claim.

Claim.—The box with two compartments and with a sliding lid and stops so constructed and arranged as to permit either compartment to be opened, but to prevent both from being opened or uncovered at the same time, substantially as herein described.

No. 53,679.—WILLIAM A. RICHARDSON and HENRY D. WARD, Worcester, Mass.—*Lamp Extinguisher.*—April 3, 1866.—The wings have elastic supports and are simultaneously closed over the flame, falling back when off duty.

Claim.—First, the two wings *r*, combined and arranged in relation with each other and with the wick tube of the lamp, substantially as herein set forth for the purpose specified.

Second, the elastic construction of the lower parts of the said wings *r* for the purpose of holding them apart, substantially as described, until the flame is to be extinguished.

Third, the combination of the shafts *u*, arms *c* and *c'* and elastic wings *r*, substantially as herein set forth for the purpose specified.

Fourth, the catch *w*, in combination with the arms *c* and *c'* and wings *r*, substantially as herein set forth for the purpose specified.

No. 53,680.—JOHN T. RICH, Philadelphia, Penn.—*Cut-off Valve Gear.*—April 3, 1866.—The eccentric of the engine is connected to the toggle joint and actuates the valve positively in opening and closing. The toggle joint is combined with the governor by means of a bell-crank lever, so that the point of cut-off is determined by the governor alone or by the combined action of the governor and eccentric acting through the toggle joint.

Claim.—First, actuating the cut-off valve of a steam engine positively, both in opening and closing, through the medium of a toggle joint, and multiplying the motion thereof, substantially as set forth.

Second, so combining the governor and cut-off valve of a steam engine by means of a bell crank F, lever G, and other connecting mechanisms, as set forth, that the valve may be operated by the governor in connection with and independently of the toggle joint E, substantially as set forth.

Third, the connecting rod D, toggle joint E, bar *M*, link L and lever G, in combination with the stud H, valve stem N and valve I, the parts being constructed and arranged substantially as and for the purposes set forth.

Fourth, in combination with the cut-off valve stem N the stud H, constructed substantially as set forth.

No. 53,681.—S. S. ROCKWELL, Lansing, Mich.—*Bag Holder.*—April 3, 1866.—The springs which keep the mouth of the bag expanded are provided with a shield or spout to assist the entrance of the grain.

Claim.—The shield D, in combination with the springs E, when used for the purpose of a bag holder, in the manner and for the purpose herein described.

No. 53,682.—WILLIAM ROSE, St. Louis, Mo.—*Apparatus for Cooling Beer.*—April 3, 1866.—The wort tub has a jacket with a current of water; air from a bellows is disseminated by radial perforated pipes through the liquor.

Claim.—The process of forcing air through the liquid, thus bringing the liquid in close contact with the air and reducing the temperature of the liquid to the temperature of the air forced through it.

No. 53,683.—RICHARD ROTHWELL, Dover, N. H.—*Lathe Chuck.*—April 3, 1866.—The tail-stock of the lathe has a conical cap upon which the end of a hollow shaft is chucked.

Claim.—The conical-shaped lathe chuck A, having a series of longitudinal grooves or depressions *d d* upon its periphery, substantially as and for the purpose specified.

No. 53,684.—THOMAS WELCOME, Roys, New York, N. Y.—*Tackle for Raising Sunken Whales, and other Bodies.*—April 3, 1866.—India-rubber bands are interposed as a yielding link of connection in the tackle to prevent breakage when the rope is strained by the rolling of the ship.

Claim.—First, the yielding connecting link, substantially as illustrated in figures 1 and 2, introduced between the suspension rope and tackle block, or in the suspension rope on either side of the blocks, substantially as shown and described.

Second, the use of a weight working within guides in combination with the said spring or springs, as above, substantially in the manner and for the purposes hereinbefore described and set forth.

Third, the combination and use of the two horizontal bars or axles B B′ with the grooved pulleys. plain or fluted rollers C and India-rubber rings or endless bands D and suspender braces E, substantially in the manner and for the purposes hereinbefore described and set forth.

No 53,685.—GEORGE H. RUSSELL, Dickinson, Penn.—*Fruit Jar.*—April 3, 1866.—The notched cap passes the studs which protrude inward from the neck of the jar; spiral flanges on the upper margin of the cap traverse beneath the studs and compress the packing of resilient material covered with rosin and tallow.

Claim.—First, forming one or more inclined ways or planes with notches at their lowest points upon the cover of a fruit jar, can, or other similar article, in combination with one or more fixed studs at the mouth of the jar, substantially as described and for the purpose specified.

Second, hermetically sealing fruit jars, cans, or other similar articles with a composition of rosin and tallow, substantially as herein above described.

No. 53,686.—ANTON SAFFER, New York, N. Y.—*Boring Artesian Wells.*—April 3, 1866.—The plates on the inside of the tube drill-stock act as guides for the axial pump-rod. The tube is valved and shod with braced drills, the motion being obtained and regu ated as to the extent by devices above.

Claim.—First, the intermediate guides *b*, arranged in the joints or couplings of the tube B and adapted to mutually steady the parts B and C, and allow an ample passage for the fluid or partially fluid matter rising between them, substantially as specified.

Second, the wheel E with its grooves *e′* and wiper F, arranged to operate relatively to the cutters B* B** and their connections, substantially in the manner and for the purpose herein set forth.

Third, in connection with the above the conical or tapered upper surface of the part E and levers H, arranged to operate together, alternately lifting and liberating the cutters B* B** and their connections, substantially in the manner and for the purpose herein set forth.

Fourth, the cutters B* B**, arranged transversely in combination with the braces B***, and with suitable reciprocating mechanism for well-boring, substantially as herein set forth.

Fifth, the hollow screw I, or its equivalent, adapted to regulate the motion of the cutters B* B**, substantially in the manner and for the purpose herein set forth.

Sixth, the shoulder *b**, arranged relatively to the screw threads and cutters and tubular stock, substantially in the manner and for the purposes herein set forth.

No. 53,687.—P. SCHULER, Philadelphia, Penn.—*Sound-board for Pianos.*—April 3, 1866.—A rigid metallic plate is placed under the sound-board, corresponding in position, curve and extent with the treble portion of the usual wooden bridge above

Claim.—The application of a metallic plate E, constructed substantially as described, to the under side and directly beneath the treble portion of the bridge C of the sound-board of a piano, substantially as and for the purpose described.

No. 53,688.—JUDSON SCHULTZ, Ellenville, N. Y.—*Tanning.*—April 3, 1866.—Sawdust from oak or hemlock is used, instead of tan bark or straw, to lay between the hides in the vat, where they are immersed in tanning liquor.

Claim.—The treating of hides or skins with saw-dust, substantially as herein described.

No. 53,689.—H. E. SCOTCHMER, Chicago, Ill.—*Shoe Brush.*—April 3, 1866.—Plates on the handle and small brush, respectively, slide into dovetail mortises in the back of the brush.

Claim.—A pocket or traveller's blacking case, provided with a brush having the handle and small brush detachable, and a blacking box arranged to pack within the case, substantially as shown and described.

No. 53,690.—GEORGE T. SHELDON, Chelmsford, Mass.—*Mould for Casting Flanged Pipe.*—April 3, 1866.—At each end of the mould are iron plates which form the end faces of the flanged pipes and carry the pins which form the bolt holes in the flanges.

Claim.—The use and application of the squaring blocks D D, and the cores *f*, for the purpose of squaring or finishing the ends of flanged pipes and forming the bolt holes in the process of casting the same, substantially as specified.

No. 53,691.—S. J SHERMAN, Brooklyn, N. Y.—*Skeleton Skirt.*—April 3, 1866.—Explained by the claim.

Claim.—First, the within described hinge joint on the ends of the hoops, the same being rigid in the vertical direction and adapted to yield inwardly, but prevented from yielding

outwardly by extending the one part past the axis of the joint so as to bear against the other part, substantially in the manner and for the purposes herein set forth.

Second, the three hinges arranged at the sides and front of the skirt hoop and capable of yielding inwardly, but not outwardly, so as to allow the skirt to be compressed inwardly at any of those points without protruding outward at either point beyond the general circuit of the hoop, substantially in the manner and for the purposes specified.

No. 53,692.—EMILE SIRRET, Buffalo, N. Y.—*Beer Faucet.*—April 3, 1866.—The beer is foamed in a chamber intervening between the barrel and the discharge cock; a reciprocating piston alternately draws and forces the beer through perforations in the cup.

Claim.—Foaming beer or other liquids any degree desired previous to their being drawn, by constructing a hollow room or reservoir within an ordinary faucet between the cross pin and the end to be tapped in the barrel, to be operated into by the syringe E, for the purpose and in the manner set forth.

No. 53,693.—JAMES L. SMITH, Tuscola, Ill.—*Sirup Filter.*—April 3, 1866.—The cylindrical vessel has an upper strainer, a lower perforated plate, and an intervening body of wool supported by braces.

Claim.—First, the arrangement of sieves D and B, the body A, and the braces C C C, in the manner and for the purpose herein specified.

Second, the wool F, in combination with the body A, and sieves D and B, when used as and for the purpose herein specified.

No. 53,694.—JOHN P. SMITH, Hudson, N. Y.—*Threshing Machine.*—April 3, 1866.—The grain is passed between a cylinder and a concave, respectively provided with semi-spheroidal projections; the straw is delivered downward.

Claim.—First, the concave provided with semi-spheroidal projections or threshing teeth *n*, substantially as and for the purpose herein set forth.

Second, the deflecting board F, so applied to the rear end of the machine as to deflect the threshed straw downward, substantially as and for the purpose herein set forth.

Third, the relative arrangement of the inclined board G^2, the ribbed threshing cylinder B, and the concave D, substantially as herein described, whereby special feeding contrivances are dispensed with.

No. 53,695.—DANIEL E. SOMES, Washington, D. C.—*Process of Generating Gases to be used for Motive Power.*—April 3, 1866.—Water and chemical combinations capable of evolving gases are projected into a highly heated retort; the gas generated is used as a motor; various chemical combinations are cited.

Claim.—First, the apparatus for generating steam or gas to be used as a motive power, substantially as described.

Second, combining and using the ingredients herein described, substantially as and for the purpose set forth.

No. 53,696.—JOHN M. SPENCER, Ottowa, Ill.—*Machine for Stripping Sorghum.*—April 3, 1866.—The stalks are fed on an endless belt to the stripping teeth, which are attached to the periphery of a cylinder and project through the grated plate; the stalks are drawn past the stripper and delivered by feed rollers.

Claim.—The arrangement shown and described of the toothed endless apron B, the toothed cylinder C, slotted plate C, feed rollers E E′, and supports or table J J′.

No. 53,697.—HORATIO SQUYER, Rochester, N. Y.—*Laundry Stove.*—April 3, 1866.—Explained by the claim.

Claim.—The combination and relative arrangement of the furnace H, having inclined planes or oblique sides I, with the cauldron D, as shown and described, the furnace being below and in front of the cauldron, which latter is encased with a fire jacket A.

No. 53,698.—JOHN G. STEIGER, Cleveland, Ohio.—*Spoke Shave.*—April 3, 1866.—The bit is clamped in the rebate of the cast-iron socket, and retained by set screws.

Claim.—The special construction of the cast handle and clamp with the shoulder *b*, formed between the clamp and the handle blade B, and set screws *d*, and operating substantially as described.

No. 53,699.—CHARLES STONE, Stoughton, Mass.—*Piping for Boots and Shoes.*—April 3, 1866.—The loop or rounded edge of a folded leather strip is presented outward.

Claim.—As a new article of manufacture a piping or binding for boots and shoes, having a rounded edge or nearly so, substantially as described.

No. 53,700.—JAMES STORY, Paris, Ky.—*Telegraph Cable.*—April 3, 1866.—The strain is taken from the insulated wires and borne by steel plates inserted in the cable, and wrapped with hemp and water-proof material.

Claim.—First, constructing marine telegraph cables with a steel plate, provided with projections upon its edges for securing a platting of hemp cords, in the manner and for the purposes described.

Second, the application and use of hemp cords, or other equivalent substances, in combination with a steel plate to support and take the tension off from the insulated conducting wires in marine telegraph cables.

Third, the use of hemp cords in plats, or other equivalent substances, in combination with a steel plate when encased, and the joints secured as herein described.

Fourth, supporting a series of curved conducting wires, in partition walls, placed in the cable at certain determined distances, and which are constructed and secured in the manner herein described for the purposes specified.

Fifth, the elastic straps *e e*, the same being placed so as to give support to the outer covering, and secured to it and the partition walls, in the manner and for the purposes described.

Sixth, providing a marine telegraph cable with air chambers, constructed substantially as and for the purposes herein specified.

No. 53,701.—ZADOK STREET, Salem, Ohio.—*Manufacture of Railroad Rails.*—April 3, 1866.—The rail heated to redness is case-hardened by the application of prussiate of potash and animal or vegetable charcoal.

Claim.—The combination of animal charcoal, vegetable charcoal or other carbonaceous material, such as animal oil or tallow and prussiate of potash, in about the proportions specified, and for the purpose of hardening railroad rails, as set forth.

No. 53,702.—GEORGE STYLES, New York, N. Y.—*Umbrella.*—April 3, 1866.—The extension rod of the handle slips within the tubular portion, and is supported at its prolongation by the catch which maintains the expansion of the frame. The catch is dislodged by a trigger.

Claim.—The telescope tubes *a b*, with holes *k l m*, in combination with the spring catch *j* and runner *e* of a parasol, constructed and operating substantially as and for the purpose described.

Also, the trigger spring *n*, in combination with the catch *j*, runner *e*, and tubes *a b*, substantially as and for the purpose set forth.

No. 53,703.—JOHN B. TARR, Chicago, Ill.—*Curtain Fixture.*—April 3, 1866.—The upper edge of the curtain is attached to the single endless cord which passes over the upper and lower rollers.

Claim.—The arrangement of the lower roller B, endless cord *b b*, curtain *a a* attached to the endless cord, and tension roller *c'*, substantially as set forth.

No. 53,704.—LEVI H. THOMAS, Waterbury, Vt.—*Mop Head.*—April 3, 1866.—The cloths are clamped between the cross-piece on the end of the handle and the stirrup, whose notched upper ends are retained by a pivoted link.

Claim.—The handles or guards E E on the wire D, substantially as and for the purposes herein set forth.

No. 53,705.—SAMUEL I. TRASK, Guilford, N. Y.—*Clothes Dryer.*—April 3, 1866.—The latches retain the hinged side frames displayed. Two of the feet have rollers to facilitate transference of the clothes rack.

Claim.—First, the combination with the side frames which contain the bars for sustaining the clothes, and which are hinged together at the top of the latches D and E, substantially in the manner and for the purpose set forth.

Second, the combination with the said side frames, constructed as described, of the shoes G and rollers F, the said shoes and rollers being on the same end of the clothes drier, as and for the purpose herein above specified.

No. 53,706.—ERWIN W. TUCKER, Lowell, Mich.—*Bed Bottom.*—April 3, 1866.—Two side pieces are pivoted to the side rails near the foot and are adjustable vertically at the head by racks and pinions; upon this basis are supported cross-bars and spring slats.

Claim.—First, the bar H, with cogs *a a* and rack bars *b b*, when arranged in the manner and for the elevating or lowering the head of a bed bottom, substantially as and for the purposes specified.

Second, the bars D and bars F, with springs E, in combination with the springs B B, rails C, arranged substantially as and for the purposes herein set forth.

No. 53,707.—REUBEN D. TURNER, New York N. Y.—*Slide Valve for Steam Engine.*—April 3, 1866.—A tube on the back of the valve reciprocates in cylindrical seats in the walls of the inner steam chest. The valve stem is fastened to the tube. The steam from the outer steam chest passes into the tube and through the valve to the main cylinder.

Claim.—The hollow piston E, cylinders C C, and inner valve chest B, in combination with each other, and with the valve D and outer chest A, substantially as and for the purpose herein specified.

No. 53,708.—A. C. VANBEBBER, A. SALLEE, and J. BRITTON, Fulton, Ill.—*Balance Slide Valve.*—April 3, 1866.—The back of the valve is connected by a jointed rod to a piston which reciprocates in a vertical open-ended cylinder above the steam chest. A guide keeps the piston stem in line; a spring and temper screw preserve the vertical adjustment of the piston, and a yoke above restrains the exit of the piston if the connections break.

Claim.—First, the combination with a steam-engine valve C of the suspension rod E, balancing piston D D P, and guide O, all constructed and arranged to operate as and for the purposes specified.

Second, the combination of the spring G and temper screw I, as and for the purposes specified.

Third, the guide H, projecting inward over the edge of the piston D, to act as a guard to prevent the blowing out of the piston, in the manner described.

No. 53,709 —AARON C. VAUGHAN, Rainsburg, Penn.—*Burning Fluid.*—April 3, 1866.—Composed of benzine, forty gallons; rosin, twenty pounds; burning oil, eight hundred gallons.

Claim.—First, treating benzine with common resin, in the manner and for the purpose set forth.

Second, a burning fluid composd of benzine treated with resin and mixed with ordinary illuminating oil, as set forth.

No. 53,710.—J. M. WALLIS and ELIAS MILLER, Milton, Iowa.—*Corn Harvester.*—April 3, 1866.—The lever passes through the rock shaft and extends under the ends of the revolving catchers, which discharge the gavels when the catchers are released by the motion of the lever.

Claim.—The bar L, passing through the shaft M and arranged in relation with the arms J, substantially as and for the purpose specified.

No. 53,711.—A. WARTH, Stapleton, N. Y.—*Construction of Pulleys.*—April 3, 1866.—The tractional surface consists of leather surfaces backed by India-rubber and clamped by metallic disks.

Claim.—First, the working face or faces of a pulley of one or more layers of India-rubber or other soft and elastic material covered with leather or other flexible material, substantially as and for the purpose described.

Second, the combination and arrangement of the adjustable disks *a a'*, India-rubber plates *b*, leather faces *d*, and intervening metal plate *e*, all constructed and operating substantially as and for the purpose described.

No. 53,712.—FRANZ WEGRATHER, Chicago, Ill.—*Egg Holder.*—April 3, 1866.—The egg is held by the sectional cup, one end being exposed.

Claim.—The cup formed in sections, as shown and provided, with the cup A and spring B, all arranged to operate as and for the purpose set forth.

No. 53,713.—THOMAS WELCH, Churchville, N. Y.—*Harvesting Machine.*—April 3, 1866.—The arrangements are for taking up the slack consequent upon the wear and for allowing free vertical adjustment to the cutter bar.

Claim.—First, the pitman P, and set nuts in harvesters in combination with the head or case A, whereby the wear of the boxes *b* and *b'* may be compensated for.

Second, the use of the swivel nut E, constructed, arranged, and operating substantially in the manner and for the purposes set forth.

Third, securing the head or case A and boxes *b* and *b'* to the crank pin O of harvesters, by means of the groove *c* and rib *e*, substantially as shown and described, and for the purposes set forth.

No. 53,714.—THOMAS WELHAM, Washington, D. C.—*Ladies' Fan.*—April 3, 1866.—Explained by the claims.

Claim.—First, a fan so constructed in relation to its handle that the fan and the handle may be adjusted in line or at any desired angle, substantially as described.

Second, so pivoting said fan as to permit it to revolve upon the handle, whether fixed in line with the handle or set at any angle, all substantially as described.

Third, in combination with such adjustable or revolving fan, a casket in the handle thereof, substantially as described.

Fourth, in combination with such adjustable or revolving fan, the weighted extremities of the fan or feathers thereof, substantially as described.

No. 53,715.—DANIEL WHEELER, Decorah, Iowa.—*Boring Artesian Wells.*—April 3, 1866.—The drill-rod rope is attached to a pivoted lever which is depressed by the recurrent motion of a cam; provision is made for the paying out of the drill rope and the rotation of the drill.

Claim.—First, the combination of stop F, catch A, and ratchet B, in combination with rollers B and E or any equivalent contrivance, working substantially as described.

Second, the cog wheel A N with the square hole A B for the drill rod to work in, in combination with the moving dog C stop dog F F, and spring E, connected with dog C or any equivalent contrivance, working substantially as described.

No. 53,716.—WARREN B. WHEELER, Waterloo, N. Y.—*Roofing Cement.*—April 3, 1866.—Composed of coal tar, shellac, linseed oil, slaked lime, plaster of Paris, French tallow, Venetian red, whiting litharge, water lime, cement, stone plaster, and anthracite coal ashes.

Claim —The composition of matter above described for covering roofs of buildings, together with the process of applying the same, as set forth in the above specification.

No. 53,717.—JAMES D. WHELPLEY, Boston, Mass.—*Belted Friction Gearing.*—April 3. 1866.—The drums are maintained in frictional contact by belt pulleys on their axes and strained belts thereon.

Claim.—The belted friction gearing consisting of friction drums A B, belt pulleys *a b a' b'*, and belts *d d'*, arranged, combined, and operated substantially as described and for the purpose stated.

No. 53,718.—JAMES D. WHELPLEY and JACOB J. STORER, Boston, Mass.—*Apparatus for Separating Ores.*—April 3, 1866.—The upper hopper has a division plate and descending flanges which give a tortuous course to the air; either chamber may be discharged into the pocket below, which itself may be emptied without affecting the upper ones.

Claim.—First, the secondary hopper, in combination with the main hopper, and opening into it and into the open air by valves to be employed alternately, substantially as described.

Second, the door *c* and its rod *g*, in combination with partition *b*, substantially as and for the purpose described.

Third, the valves *e e' e''*, constructed respectively with their openings *k*, of the same size and shape as the open area of the bottom of the cavity to be closed, in combination with the bottom of the hopper and the dust-tight felt packing, subtantially as described.

No. 53,719.—LUTHER C. WHITE, Waterbury, Conn.—*Scissors.*—April 3, 1866.—Between the place where the handle is riveted to the blade and the shoulder or enlargement of the handle, a space is left which facilitates grinding and sharpening.

Claim.—Forming a shoulder upon the handles of scissors or shears so that a recess shall be left between the same and the blades when riveted thereto, for the purposes herein specified.

No. 53,720.—S. B. WILLIAMS, Wheeling, West Va.—*Smut Machine.*—April 3, 1866.—The machine has a perforated concave, revolving beaters, air regulators, and conductors. The air is conducted in separate downward currents within and around the concave, passes into the fan case, and is discharged.

Claim.—The combination of the perforated concave D, fan J below said concave, the beaters U, air regulator K^3, and air conductors W X Y, all arranged as herein specified to force the air in separate downward currents within, around, and outwardly through the perforated walls of the concave, the external current being governed by the regulator K^3, and all the currents mingled with the dust in the fan case below.

No. 53,721.—CHARLES A. WILSON, Cincinnati, Ohio.—*Steam Gauge.*—April 3, 1866.—The steam chamber communicates by pipes with the steam and water spaces of the boiler, and by a pipe with the expansible diaphragm, whose motions are registered on the dial.

Claim.—The air chamber A, whose upper part communicates by a pipe B with the boiler steam space, while its lower part communicates by a pipe D with a diaphragm chamber of a steam pressure gauge, and its extreme bottom by a pipe C with the boiler water space, or devices substantially equivalent, for the purpose set forth.

No. 53,722.—ARCALOUS WYCKOFF, Elmira, N. Y.—*Hollow Auger.*—April 3, 1866.—The cutters on the edge of the revolving cylinder are each only half the width of the kerf. The alternate cutters are adapted to cut the outer and inner portion of the kerf.

Claim.—The cutters A A, constructed with two or more alternately projected cutting points C and D, so arranged as to cut in parallel but concentric planes, substantially in the manner and for the purpose set forth.

No. 53,723.—WILLIAM C. WYCKOFF, Brooklyn, N. Y.—*Postage and Revenue Stamps.*—April 3, 1866.—To prevent the removal of the stamped paper by moistening.

Claim.—Coating the side of the paper which is to receive the print of the postage or revenue stamp with a surface of water-color pigment or paint, or some sufficiently opaque or non transparent surface as to receive a good impression from types or plates, and at the same time be soluble in water or other fluid, substantially as described.

No. 53,724.—WILLIAM W. ARMINGTON, Meriden, Conn., assignor to himself and STEVEN L. USHER, New Haven, Conn.—*Stove Blacking Cutter.*—April 3, 1866.—The stick of stove blacking is pushed by a spring and follower against a knife, which revolves in a vertical plane. The shavings are received in a pan.

Claim.—The follower E and the cutter D, constructed and arranged to operate substantially in the manner herein described, in combination with the pan A, or its equivalent, for the purpose specified.

No. 53,725.—JOHN G. BAKER, Philadelphia, Penn., assignor to HENRY DISSTON, of same place.—*Saw-grinding Machine.*—April 3, 1866.—Explained by the claim.

Claim.—First, the combination with a grindstone J of a segment G, for holding a saw blade on its concave surface, to which segment a vibrating motion in the arc of a circle having a fixed centre is imparted by the mechanism described, or any equivalent to the same, for the purpose specified.

Second, the combination of the rock shaft H, rods *d d*, segment G, and the nuts *f f*, or their equivalents, for adjusting the said segment on the rods.

Third, the combination of the reversible pulley F, belt or band E″, and segment G.

Fourth, the combination of the segment, its set screw *h*, the sliding piece *i*, and its set screw *h′* and spring lever *i′*, the whole being arranged for the retention and release of the saw blade, substantially as and for the purpose herein set forth.

Fifth, the combination of the segment G, and its adjustable dogs *k* and *k″*, with the devices herein described, or the equivalent to the same, for shifting the driving belts.

Sixth, the grindstone dresser, composed of a number of disks *s* with pointed teeth, adapted to the sliding spindle Q′, and operating substantially as and for the purpose herein set forth.

Seventh, the screw shafts N N, having threads of different pitches, those of one pitch controlling the position of the grindstone, and those of the other pitch controlling the position of the dressing device, all substantially in the manner and for the purpose herein set forth.

No. 53,726.—CHARLES A. BALL, New York, N. Y., assignor to himself and THOMAS LIVEY, of same place.—*Check Hook.*—April 3, 1866.—The spring hook is opened to enter the rein, but prevents its accidental disengagement.

Claim.—The spring-check rein hook attached to the socket or plate *a* by the fulcrum pin *d*, and provided with the moving end *x*, that closes against the socket or plate *a*, as and for the purposes specified.

No. 53,727.—JOHN H. BARNES and THOMAS W. BROWN, Brooklyn, N. Y.—*Curtain Fixture.*—April 3, 1866.—The hook over which the cord is looped is attached by a slotted plate and set screw to the casing.

Claim.—The described device for holding and tightening the cords of window shades, &c., consisting of the plate A, with the hook B, or its equivalent, for taking the cord, such plate and hook being so arranged as to have motion up and down upon the screw by which they are held to the casing.

No. 53,728.—MORITZ BAUMGARTEN, New Haven, Conn., assignor to himself, JACOB HELLER, G. C. CLARK, A. S. KEELER, and MORRIS STEINHART, of same place.—*Key Board for Organs, &c.*—April 3, 1866.—The two banks are arranged in such close proximity that the keys of each may be touched simultaneously by the same hand.

Claim.—Constructing and combining two banks of keys, substantially in the manner and for the purpose herein set forth.

No. 53,729.—HEZEKIAH BRADFORD, New York, N. Y., assignor to HORATIO BOGERT, of same place.—*Inkstand.*—April 3, 1866; antedated March 30, 1866.—The reservoir has a lower orifice with an internally salient plug, and an upper dipping well with a closing cork.

Claim.—First, a stationary cork or yielding stopper with or without a tapering or inclined end against which the pen comes in contact when it is dipped into the ink, as set forth.

Second, the combination of the stopper *e*, well *b*, and fountain *c*, as and for the purposes specified.

Third, the fountain *c*, and well *b*, in combination with a stopper in the bottom of the inkstand as set forth, whereby the fountain may be filled when the inkstand is inverted, as specified.

No. 53,730.—RUFUS CHANDLER, Springfield, Mass., assignor to himself and M. S. MAY, Milford, Mass.—*Clamp Pulley.*—April 3, 1866.—The two segments are united by dovetail tenon and mortise in the respective pieces; they are keyed by a roll, which becomes jammed between the shaft and the pulley.

Claim.—A clamp pulley having sections, A and B, with dovetail connections therewith, as described, and a roll *e*, all constructed, combined and arranged substantially as herein specified.

No. 53,731.—JOHN COLLICOTT, Boston, Mass., assignor to himself and OTIS MARSHALL, of same place.—*Rotary Steam Engine.*—April 3, 1866.—The piston is attached to the hub and its peripheral packing is thrust outward by the pressure of steam which impinges upon the piston at its mid-length. The valve at its ends rests on shoulders in the ends of the cylinder.

Claim.—First, the pistons D D when formed in one piece with or immovably fixed to the rotary cylinder, and provided with packing strips acted on by the pressure of the steam, substantially as and for the purposes herein set forth

Second, the steam chest with its rotary balance valve, in combination with the steam ports and channels of a rotary steam or air engine, when arranged so that the steam shall be allowed to impinge directly upon the pistons in the centre of their lengths, and at right angles, or nearly so, with their surfaces.

Third, the hinged valves extending from end to end of the cylinder, when formed at their ends, to pack against the shoulder *c'*, on the cylinder heads by the pressure of the steam, as described.

No. 53,732.—JOHN B. CROWLEY, Cincinnati, Ohio, assignor to CHAMBERLAIN & CO., of same place.—*Cooking Stove.*—April 3, 1866.—Provision is made for the elongation by heat by the fire back, a hollow stand upon the top oven-plate supports the top and admits air to the fire; a hinged flap recessed into the hearth cover may be raised to enclose the fire front, the jamb plates rest on the hearth plate.

Claim.—First, a fire back of a cooking stove composed of two or more overlapping or rebated plates F F, secured at the mid-width of the stove, while permitted unrestricted elongation toward the sides of the stove, substantially as set forth.

Second, the hollow perforated stand or rest H, in combination with a centre plate, perforated at its middle portion, substantially as set forth.

Third, a stand or rest having a circular or other symmetrical head which fits a corresponding rim on the under side of the centre plate, for the purpose of support and reversal, as explained.

Fourth, the arrangement of depressed hearth plate L *l l*, flaps, eccentric legs *m*, hook N, and eye O, as herein described.

Fifth, the jamb plate G *g*, formed and arranged in the manner and for the purpose set forth.

No. 53,733.—WILLIAM DELANO, Bangor, Maine, assignor to himself and WALTER K. FOSTER, of same place.—*Horseshoe Calking Vice.*—April 3, 1866.—A vibratory plate is interposed between the vise jaws to form an abutment against the upper surface of the shoe while the toe or heel calks are being made.

Claim.—The new or improved horseshoe-calking vice, made substantially as described, viz., of the vibratory bearer or plate G, and the common vice having two jaws A B, the whole being arranged and combined substantially in manner and so as to operate as and for the purpose specified.

No. 53,734.—WILLIAM DEVINES, Brooklyn, N. Y., assignor to HOWELL SMITH, of New York, N. Y.—*Corset Busk Clasp.*—April 3, 1866.—The shanks of the hook and the eye are respectively attached by spring clamps to orifices in the plates which are inserted in the hems of the garment.

Claim.—The attaching of hooks and eyes to garments by means of clamps, constructed and arranged to fit over and catch into slots in springs inserted in hems in the garment, the clamps passing through openings in the sides of the hems, substantially as herein shown and described.

No. 53,735.—J. H. FAIRCHILD, East Highgate, Vt., assignor to himself and GEORGE L. HAYWARD, same place.—*Grain Separator.*—April 3, 1866.—The screen is agitated and its meshes cleared by a spring hammer which strikes on the ends of the ribs, being tripped by the passing rib.

Claim.—The lever G, hammer *m*, and spring L I, in combination with the packing *j*, and roller *p*, when arranged and operating substantially as and for the purpose set forth.

Also, the adjusting screw *o*, spring L, shafts *f c*, arm or wrist J, in combination with the hammer *m*, hung to the shaft *f*, lugs *g*, and reel, as and for the purpose substantially as described.

No. 53,736.—HENRY L. FRAILEY, Lancaster, Penn., assignor to himself and CHRISTIAN G. HERR, of same place.—*Hydrant Stop Cock.*—April 3, 1866.—The chamber connects with the water-supply and discharge and waste pipes, the two former or the two latter may be connected by the partial rotation of the perforated plug.

Claim.—A stop cock, the barrel, C, of which is provided with three pipes D' E' F', opening into the chamber, and the key B, with a hollow central portion communicating by apertures 1 2 with the pipes D' E', and by its perforation 3 4, with pipes F' E', arranged and operating in the manner and for the purpose specified.

No. 53,737.—CONRAD FREESE, Aurelius, N. Y., assignor to himself and FREDERICK H. LYON, of Cayuga, N. Y.—*Ditching Machine.*—April 3, 1866.—A circular platform and horse track supported on rollers by which it moves over the surface; a vertical post in the centre is revolved by the sweeps, and gives motion to a cutter wheel which rotates in a vertical plane and delivers the dirt by the side of the ditch.

Claim.—First, the horizontal framing A, and annular platform B, supported by or mounted upon rollers *c c' c'' c'''*, in combination with a rotary digger M, operated by draught animals attached to sweeps J, and walking around the platform B, substantially as and for the purpose set forth.

Second, the two rollers *c c'* arranged or applied to the platform A, substantially as shown and described, for the purpose of turning the machine as set forth.

Third, the placing of the shaft N of the rotary digger M in a rising and falling frame H, arranged in connection with racks *a a* and a pivoted bar R or their equivalents, for the purpose of adjusting the digger to its work, substantially as described.

Fourth, the construction of the rotary digger M as shown and described, to wit: of the circular plate *c*, annular plate *d*, with the buckets *e* between them, provided with cutters *e'* at their outer ends and with bent inner ends *f*.

No. 53,738.—RICHARD JONES, Paterson, N. J., assignor to himself and THOMAS BROMLEY, of same place.—*Bench Vice.*—April 3, 1866.—A cam spreads the jaws at their hinging point, compressing the article between the faces, using the clamping screw as a fulcrum.

Claim.—The eccentric or cam B or its equivalent applied to a bench vice, to operate in the manner substantially as and for the purpose herein set forth.

No. 53,739.—LUKE L. KNIGHT, Barre, Mass., assignor to J. E. TAYLOR, of Sutton, Mass.—*Hay Spreader.*—April 3, 1866.—The hay, elevated by the revolving fingers, is taken therefrom and scattered by the fingers on the rapidly revolving secondary shaft.

Claim.—The combination of the shaft D provided with the clearers E, and the revolving shaft B provided with the elevating fingers or tines C, as and for the purpose specified.

No. 53,740.—JOSEPH D. LOVELAND, Wheatfield, N. Y., assignor to DATON S. MORGAN, of Brockport, N. Y.—*Harvester Rake.*—April 3, 1866.—The gavel is swept on to the platform by pliable teeth and discharged therefrom by a reciprocating rake.

Claim.—The combination in a harvester of teeth or brushes on the reel ribs to sweep the grain upon the platform, with a vibrating sweep rake to remove it therefrom, the combination being and operating substantially as described.

No. 53,741.—J. A. MARDEN, Newburyport, Mass., assignor to SAMUEL VANCE and A. E. CURRIER, of same place.—*Leather Splitting Machine.*—April 3, 1866.—The leather is passed over an adjustable cylinder beneath a pressure belt and pressure shoes against a longitudinally reciprocating knife.

Claim.—First, the rotating cylinder B in connection with the reciprocating knife S, arranged relatively with each other to operate in the manner substantially as and for the purpose set forth.

Second, the pressure shoes Y in combination with the rotary cylinder B and reciprocating knife S.

Third, the endless apron U connection with the pressure bar W, shoes Y, cylinder B, and knife S, substantially as and for the purpose specified.

Fourth, the placing of the cylinder B in adjustable bearing, substantially as shown when said cylinder is used in connection with the reciprocating knife, endless apron, pressure shoes and pressure bar, substantially as and for the purpose set forth.

No. 53,742.—MELCHOR B. MASON, New York, N. Y., assignor to UNITED STATES MINING and ORE DECOMPOSING COMPANY, of same place.—*Process for Desulphurizing Ores.*—April 3, 1866 —Explained by the claim.

Claim.—The combination of lime, nitrate of soda, and other equivalent alkaline substance with pulverized or disintegrated ore in a raw condition, preparatory to the calcination thereof, all substantially in the manner and for the purpose herein set forth.

No. 53 743.—JAMES S. MCCURDY, Bridgeport, Conn., assignor to ELIAS HOWE, Jr., Fairfield, Conn.—*Sewing Machine.*—April 3, 1866.—The lever shuttle driver works on an inclined track, its wedge-shaped end fitting the heel notch in the shuttle; the thread controller takes up the slack of the needle thread, dispensing with levers, &c. The frictional attachment of the driving pulley to its shaft permits it to slip when obstructions offer or when the needle strikes foul. The spooler is attached to a resilient spring, which keeps it apart from the driving wheel until brought in contact by a thumb screw.

Claim.—First, a needle throat or die so constructed and arranged that it forms a guide for the needle throughout the whole depth of and below the shuttle race, and that its upper part presents above the work plate a rounded annular edge of such a character as to form a centre between which and the pressing device or devices the cloth may be turned about a center in line or concentric with the axis of the needle, substantially as herein described.

Second, in combination with the throat constructed and applied as above described, the two independently but simultaneously acting pressure rollers E E', applied and operating as herein specified.

Third, the lever-like finger *p*, fulcrum pin *p'*, spring s, and irregular shaped track *r r'*, in combination with each other and with the shuttle race and shuttle, substantially as and for the purpose herein specified.

Fourth, the single-grooved friction roller T, spring U, and guide *w*, applied in combination, and operating substantially as and for the purpose herein specified.

Fifth, the attachment of the driving wheel or pulley to the main shaft of the sewing machine by friction, in the manner substantially as and for the purpose herein specified.

Sixth, the spooler attached to the sewing machine by means of a spring Q, applied and having its position controlled by a screw s, substantially as and for the purpose herein specified

No. 53,744.—JONAS MULL, Troy, N. Y., assignor to himself, ASA D. REED, and J. R. CALKINS.—*Griddle Cake Baker.*—April 3, 1866.—The upper and lower sections contain recesses for batter; openings for the fumes lead from the recesses to the outer edge of the sections and underneath the inward flange of the outer rim.

Claim.—The employment of the inward and annular or surrounding flange or projection A′ of the surrounding rim A, and its combination with the griddle-cake baking sections B and C, and flues or apertures G, in the manner and for the purposes substantially as herein described and set forth.

Also, the employment of the annular or surrounding chamber *a*, and the combination thereof with the flues or apertures G, and with the inner flange or surrounding projection A′, in the manner and for the purposes substantially as herein described and set forth.

No. 53,745.—WALLACE T. MUNGER, Branford, Conn., assignor to himself and J. A. LEGGAT, of same place.—*Knob Latch.*—April 3, 1866.—The latch bolt is projected by a spring pressing upon a link attached thereto; the rear bar of the yoke is recessed into a slot of the follower, and when the spindle is withdrawn permits the reversal of the bevel of the latch bolt.

Claim.—First, the combination of the latch bolt C, the yoke H, and follower E, substantially in the manner and for the purpose specified.

Second, the combination of the horseshoe F, link I, spring M, and lock bolt D, substantially in the manner and for the purpose set forth.

No. 53,746.—WILLIAM ORR, Jr., Clinton, Mass., assignor to himself and WILLIAM ORR, Sr., of same place.—*Machine for Winding Yarn.*—April 3, 1866.—The yarn is wound directly from the swift upon the quill, which has a receding transverse motion to secure the proper "building up" of the yarn. The pendulous swift eases the yarn when the spindle is suddenly started. The elastic rollers maintain a slight tension on the yarn and prevent its being delivered beyond the guides when the machine is stopped.

Claim.—First, in machines for winding yarn, hanging the swift on a pivot at one side of the centre of its length, or at one side of its centre of gravity, so as to give it a pendulous character, substantially as described.

Second, passing the yarn on its way from the swifts to the quill between the elastic rolls, arranged and applied substantially as and for the purpose above described.

Third, in combining in one machine devices for winding yarn from the swifts, and quilling the yarn, when the two operations are performed by such combination in one connected operation, by means of the sockets V W, the guides H H′, and the elastic rolls *m*, substantially as described.

No. 53,747.—JOHN RICHARDSON, Turner, Maine, assignor to himself and EDWIN FERNALD, of same place.—*Machine for Holding and Grinding Edge Tools.*—April 3, 1866.—The tool-holding clamp is attached by a thumb-screw to the grindstone frame; the tool is clamped at the required angle of presentation and moved laterally across the face of the stone by a lever.

Claim.—The improved machine constructed as herein before described, for holding and grinding chisels, plane-irons, and any other tools requiring a like bevel, and any tool having an angular edge of like bevel, perfectly true and with entire accuracy and to any bevel required, either acute or obtuse.

No. 53,748.—LEON T. RICHER, New York, N. Y., assignor to himself and ISAAC L. ALLEN, same place.—*Water Can for Railroad Cars.*—April 3, 1866.—The valve in the discharge cock is operated by a trigger in the handle. The can has distinct cold water and waste-water chambers.

Claim.—First, the employment of the waste or unclean water chamber L, in combination with the vertical connecting tube K and receptacle or box J, each being constructed and arranged in the manner and for the purposes substantially as herein described and set forth.

Second, the employment of the discharge-water valve D, in combination with the discharge pipe C, and with the valve chamber E″, each being constructed and arranged in the manner and for the purposes substantially as herein described and set forth.

Third, the employment of the coil or spiral spring E, in combination with the valve rod *d*, upper connecting rod F, lever G, thumb piece H, and with the tube E′, each being constructed and arranged in the manner and for the purposes substantially as herein described and set forth.

No. 53,749.—MILTON ROBERTS, St. Paul, Minn., assignor to himself and NATHAN H. ROBERTS, Richfield, Minn.—*Attachment in Ploughs.*—April 3, 1866.—The plough is hinged to the side of a wheeled frame on which the driver sits. It precedes the wheel on the working side

and is capable by partial vertical rotation of being loaded on to the frame for transportation. The weeds are gathered by inclined rods and flattened by the roller in the rear.

Claim.—The attaching of the plough to the axle and wheels, in the manner substantially as and for the purpose herein set forth.

Also, the rod J, pivoted to the axle A, and provided with a hook I at its outer end, in combination with the plough and the wheels and axle, substantially as and for the purpose specified.

Also, the wheel B, provided with the concave flange K, in combination with the plough F, substantially as and for the purpose set forth.

Also, the rollers N, placed in the frame M, having the rods O O attached, in combination with the plough and the wheels and axle, substantially as and for the purpose specified.

No. 53,750.—H. M. STOKER, Watson, Ill., assignor to himself and J. C. STOKER, of same place.—*Pump* —April 3, 1866.—The double action submerged cylinder reciprocates upon two stationary valved pistons. The central abutment in the cylinder has two valved openings and a central discharge.

Claim.—The reciprocating pump cylinder B, in combination with the fixed or stationary valvular pistons E E′, and the abutment F, placed or secured within the pump cylinder, and provided with the openings and valve with the eduction or force tube G communicating with said openings, substantially as and for the purpose herein set forth.

No. 53, 751.—GEORGE F. STONE, Philadelphia, Penn., assignor to himself and J. H. WHITHURST, same place.—*Sheet-metal Can.*—April 3, 1866.—The depressed marginal groove in the disk, which receives the end of the cylindrical portion, is dipped beneath the solder, which runs into the groove without reaching the surface of the disk.

Claim.—The disk A, which forms the end of a tinned plate vessel, and its groove *c*, constructed as described for the reception of the edge of the body D, when the whole is applied to a bath of molten solder, having its depth arranged in respect to the said disk and its groove, as set forth for the purpose specified.

No. 53,752.—SALMON E. TYLER and RICHARD TATTERSHALL, Beloit, Wis., assignors to themselves and JACKSON SIMONS, of Anoka, Minn.—*Hand Corn Planter.*—April 3, 1866; antedated February 17, 1866.—The adjustable recessed cylinder has a reciprocating head, operated by a spring and cord, to drop corn when the cord is pulled.

Claim.—The reciprocating head E, rotating in the grooves *e e e*, the adjustable recessed cylinder D, graduating the grooves *j j j*, in connection with the set-screw H, when constructed substantially as herein set forth and described.

No. 53,753.—EDWARD ALFRED COWPER, Westminster, England.—*Cotton Gin.*—April 3, 1866.—The fibre is grasped by positive devices close by the seed, and is so held while another part pushes the seed away from the fibre. The holders work intermittingly, or two sets alternately, one set holding the fibre or drawing it away while the other set pushes the seeds away.

Claim.—First, the intermittent nipping or forcible holding of the fibre of the cotton very nearly close up to the seed by the holding instruments, caused to approach at intervals, so as to nip or hold the fibre while the seeds are detached by another part of the apparatus.

Second, the nipping-blade A, roller B, and beater C, operating in combination in any manner, substantially as herein described.

No. 53,754.—WILLIAM WEAVER, Phœnixville, Penn., assignor to E. PRICE, of same place.—*Paring, Cutting, and Coring Machine.*—April 3, 1866.—The serrated plate forms a gauge of depth for the paring knife; a peach quartering knife is attached to the same lever. Apples, &c., are quartered and cored by a circular and four-flanged cutter.

Claim.—First, the curved serrated plate *e*, in combination with the lever F and knife *d*.

Second, the box A, receptacle A′, tubes J J′ and K, and plates *i i*, the whole being arranged as and for the purpose described.

No. 53,755.—ROBERT D. WRIGHT, St. Louis, Mo., assignor to himself and L. B. HOLLAND, same place.—*Rotary Engine.*—April 3, 1866; antedated March 21, 1866.—Steam is admitted and educted through the plunger to the annular space in which the rotary piston traverses. The incline preceding the piston raises the plunger which closes behind it.

Claim.—The employment of the plunger *b*, in combination with the rotary piston *c f*, all being constructed and arranged to operate substantially as herein described and represented for the purposes set forth.

No. 53,756.—COWPER PHIPPS COLES, Ventnor, England.—*Means of Protecting the Bottom of Ships.*—April 3, 1866; patented in England, May 21, 1864.—To hold the cement the submerged surface is roughened by nails, ribs, wire netting, fabric, battens, &c.

Claim.—The combination of the exterior portions of structures that are liable to be submerged, with cement, by means of holding agents, the whole being combined and operating substantially as set forth,

No. 53,757.—Charles Dion, Montreal, Canada.—*Fire Alarm.*—April 3, 1866.—The expansible plate is adjusted to a scale of temperature; the required increment of heat disengages a pin, which releases a lever or weight to give an alarm.

Claim.—The spring A, plate or tube B, or other equivalents, as shown in the different modifications, in combination with the tilting lever D, or its equivalent, and with the falling weight F, or its equivalent, constructed and operating substantially as and for the purpose described.

No. 53,758.—Jules Gros, Paris, France.—*Compressed Gas Generator.*—April 3, 1866.—The fulminate is introduced into the cylinder by the revolution of the disk, whose chambers are successively presented to the opening into the cylinder; the condensed air passes to a reservoir.

Claim.—The generator *d*, provided with a revolving chambered cylinder or any equivalent device, in combination with the receiver *a*, constructed and operating substantially as and for the purpose described.

No. 53,759.—Jonathan Jopling, Bishop Wearmouth, England.—*Propelling and Steering Apparatus for Vessels.*—April 3, 1866; patented in England, May 30, 1865.—The movable case is open at the centre and for one-third of its circumference. The revolving fan expels the water in the direction determined by the presentation of the opening in the case.

Claim.—The apparatus for propelling and steering vessels, consisting of a fan or fanner-wheel fixed on a vertical shaft, and made to rotate within a movable case secured to a hollow shaft, the combination of the fan and case and shafts being substantially such as described, and operating substantially in the manner set forth.

No. 53,760.—Moritz Mahler, Montreal, Canada.—*Muff.*—April 3, 1866.—Explained by the claim.

Claim.—First, The muff provided with a covering of leather or other suitable material, without fur or hair on the side that comes next to the person, as and for the purposes set forth.

Second, the muff formed wider at the bottom than at the top portions, so that the ends may be at an inclination, for the purposes and as specified.

Third, rings or loops attached to the upper part of the muff, for the reception of the suspending cord, as set forth.

Fourth, a pocket formed in the front portion of the muff, and provided with a flap of skin or fur hanging from the top portion of the muff down over the front part of the same, as and for the purposes specified.

No. 53,761.—Peter C. Möller, Leipsic, Saxony, assignor to Johann Tobias Rominger, of Dresden, Saxony.—*Steam Generator.*—April 3, 1866.—The spaces around and between the cross-shaped cast-iron blocks form fire flues. Steam is generated in the tubular interior spaces, which are made continuous by elbows which connect their ends. Jackets enclose the connecting elbows, and a tank above supplies the water.

Claim.—The combination of the cross-shaped blocks L, water passages K, elbows M, jackets O, tank F, and coil G, constructed and arranged relatively to each other in the manner and for the purpose herein represented and described.

No. 53,762.—Ambroise Raphin, empire of France.—*Propeller for Vessels.*—April 3, 1866.—The parallel horizontal bars of the frame are connected by links, provided with paddles, and revolved eccentrically by wrists on a series of fly-wheels, whose periphery dips below the depth of the keel.

Claim.—The fly-wheel C, mounted on two or more shafts B, secured to the hull of a vessel, in combination with two or more parallel rods D and buckets *c*, all constructed and operating substantially as and for the purpose described.

No. 53,763—Alexander Schpakofsky and Nicolas Stange, St. Petersburg, Russia.—*Apparatus for Burning Liquid Hydrocarbons.*—April 3, 1866.—The ascending column of air passes the orifice, whence issues a spray of hydrocarbon fluid, in association with which it passes to the burner.

Claim.—The method of, and apparatus for, burning the vapors of hydrocarbon fluids, substantially as herein shown and described.

No. 53,764.—A. B. and Frank S. Taft, Montreal, Canada.—*Car Coupling.*—April 3, 1866; antedated March 21, 1866.—The shackle has two shoulders, which engage spring-pins in the respective draw-heads; it becomes disconnected by extreme lateral deflection.

Claim.—The shackle E, provided with the shoulders *d e*, and fitted in the draw-head as shown, in connection with the pins B B, provided with springs C, and having rods D attached, all being arranged to operate substantially as and for the purpose set forth.

No. 53,765.—John T. Ackley and John K. Truax, Philadelphia, Penn.—*Manufacture of Cans.*—April 10, 1866.—Explained by the claim.

Claim.—The application of pitch or a bituminous or resinous cement to the inside or the outside of a box or can, made wholly or partially of paper, substantially as and for the purpose above set forth.

No. 53,766.—Levi O. Allen, Gardiner, Maine.—*Churn.*—April 10, 1866.—Each compartment of the churn is provided with beaters adjustable on the shaft; the cream receives an initial compressing and rubbing action in and passing from the smaller chamber.

Claim.—First, the compressing curb C and disk H, acting in combination with the adjustable floats inclosed by them, as and for the purpose described.

Second, the arrangement and mode of adjusting the floats relatively to each other and the containing vessel, as and for the purpose described.

Third, the ribbed plates in each end of the churn box, in combination with the adjustable floats.

No. 53,767.—E. S. Alvord, Milford, Del.—*Constructing Wells.*—April 10, 1866.—Gravel for filtering is placed below the outer well tube and upon the flange of the inner tube, the space between forming a reservoir.

Claim.—First, the combination of the driving pipe A, the inclosed short pipe C, and the pump tube B, arranged substantially as above described.

Second, the combination of the short pipe C, the pump tube B, when surrounded by gravel or other analogous filtering material, arranged substantially as set forth.

No. 53,768.—William Arronquier, Worcester, Mass.—*Staging for Buildings.*—April 10, 1866.—The outer vertical pieces support a braced staging, and are bolted to the pieces of the frame on the inside of the wall. A carriage supports the tackle and traverses on the staging.

Claim.—First, an adjustable and portable staging constructed so that it can be attached to the window frames, or similar apertures of a building, which consists of the combination of the pieces A B C D, bolts E G, and supported piece F, in the manner and for the purpose herein described and set forth.

Second, in combination with the staging above described, the metal frame or carriage H, having friction rolls *i h h j* and lips *g* and *f*, as and for the purposes herein set forth.

No. 53,769.—E. H. Ashcroft, Lynn, Mass.—*Cistern for Draining Peat.*—April 10, 1866.—The erect, perforated, open-ended tubes are auxiliary to the perforations in the sides and bottom of the vessel.

Claim.—The tank or drainage vessel constructed as described, with perforated sides and bottom, together with the perforated tubes connected therewith.

No. 53,770.—Thomas M. Aspinwall and Stephen H. Whitlock, Piqua, Ohio.—*Heater for Chimneys.*—April 10, 1866.—The box is placed above the arch of the chimney; a flue passes through it and heats a current of air which passes from the open air into the room.

Claim.—The arrangement of the heater or box for insertion in the chimney above the arch and provided with a flue A *a* A for the passage of the heated air, &c., from the fire, a cold air induction opening B, and a warm air delivery C, substantially as described and represented.

No. 53,771.—Cyrus W. Baldwin, Charlestown, Mass., and Lorenzo D. Hawkins, Stoneham, Mass.—*Leather Splitting Machine.*.—April 10, 1866.—The upper roller is maintained parallel with the lower by wedges above the journal boxes of the former, operated in concert by a shaft with right and left hand screws.

Claim.—First, the arrangement as well as the combination of the hand wheel shaft, its right and left screws, and the two wedges in the frame of the machine and with the boxes of the upper or gauge roller and springs, or their equivalents, applied to such boxes, substantially as specified.

Second, the combination as well as the arrangement of the abutments *k k* with the hand wheel shaft, its right and left screws, and the two wedges applied in the frame of the machine and with respect to the boxes of the upper or gauge roller, and the springs or their equivalents applied to such boxes, substantially as specified.

No. 53,772.—Burroughs Beach, West Meriden, Conn.—*Tree Protector.*—April 10, 1866; antedated March 30, 1866.—The disk fits the trunk of the tree and the downward projecting metallic flange presents an impassable barrier to climbing insects. An opening in the disk leads to a bottle trap.

Claim.—A disk A constructed of wood, metal, or other suitable material, and of two or more parts, in such a manner as to admit of being snugly adjusted to the trunk of a tree in combination with the pendent flange B at the under side of the disk, substantially as and for the purpose set forth.

Also, the tube C inserted in the disk in connection with the vessel D, substantially as and for the purpose specified.

No. 53,773.—J. S. Beals, Alabama Centre, N. Y.—*Plough.*—April 10, 1866.—The supplemental share separates the sod and turns it into the furrow to be buried by the main furrow-slice.

Claim.—The supplemental share D, constructed substantially as shown and described, and attached to the plough beam at the rear of the coulter and point of the share of the main plough, as and for the purpose herein set forth.

No. 53,774.—William Bedle, Keyport, N. J.—*Extension Table.*—April 10, 1866.—The semicircular ends have flaps hinging parallel to the line of extension; the table is capable of transformation into side, centre, or extension dining table.

Claim.—The leaves D D falling parallel to the line of extension when in combination with the sliding tops C C, the removable top or centre boards G G, and the stationary box frame, for the purposes set forth.

No. 53,775.—Alonzo T. Boon, Galesburg, Ill., assignor to himself and J. Scott Richman, Muscatine, Iowa.—*Float for Boats.*—April 10, 1866.—The floats are hinged beneath the platform.

Claim.—The adjustability of the buoys or floats B, by means of the ears *c* and plates *d*, and their arrangement and attachment to the platform A, substantially in the manner and for the purpose as herein set forth.

No. 53,776.—Theodore F. Boyer, Harrisburg, Penn.—*Clamp for Brooms.*—April 10, 1866.—This skeleton wire clamp embraces the broom below the sewing and maintains its symmetry.

Claim.—The wire clamp described, the same consisting of the upper part A B formed of a single piece of wire a' as described, and two straight pieces a^2 a^2 attached thereto, and of the lower part C D formed and constructed like the said upper part A B with the addition of the uprights b^1 b^2 b^3 as described; the said two parts being adapted for adjustment together on a broom, substantially as and for the purpose described.

No. 53,777.—Jenks Budlong, Chardon, Ohio.—*Manufacture of Cheese.*—April 10, 1866.—A row of cheese hoops and followers are arranged under a pressure cross-bar which is depressed by screws revolved by gearing and traversing the bridge piece.

Claim.—The described improvement in preparing or making cheese for market by condensing the curd in a series of hoops arranged as specified by the action of the screws E F, shaft I, and beam G, arranged as specified.

No. 53,778.—P. T. Brownell, Elmira, N. Y.—*Combined Umbrella and Cane.*—April 10, 1866.—The hollow cane contains the umbrella: when in use the latter is attached to the small end of the cane, the rod operating the outside stretchers running through the length of the cane and dilating the ribs by pulling downwards upon the runner.

Claim.—First, in umbrellas and parasols, placing the stretchers outside of and above the ribs, and hinging the inner ends of the ribs to the runner, substantially as described.

Second, the cane A, made substantially as above shown, with a tube C at its upper end, a sliding box K to which the stretchers J are hinged, and a rod F which operates the runner I, substantially as described.

Third, the combination of an umbrella made substantially as described with a hollow cane A, which, when the umbrella is spread, serves as its handle, and when it is closed up serves as a receptacle for it, substantially as shown.

No. 53,779.—James F. Bulkley, Brooklyn, N. Y.—*Artificial Fuel.*—April 10, 1866; antedated March 30, 1866.—The fuel blocks are composed of pulverized charcoal and whiskey, aggregated with a flour paste and dried.

Claim.—Prepared charcoal saturated with whiskey, volatile oils, and a glutinous paste formed into blocks, as a cheap aromatic, artificial fuel for common uses.

No. 53,780.—Orrin C. Burdict, New Haven, Conn.—*Die for Nut Machines.*—April 10, 1866.—The hexagonal die is constructed of pieces whose cutting edges are capable of variable presentation.

Claim.—A hexagonal die constructed in the manner substantially as herein set forth.

No. 53,781.—Orrin C. Burdict, New Haven, Conn.—*Die for Punching.*—April 10, 1866.—The number and mode of association of the pieces which constitute the die determine the shape and proportions of the opening.

Claim.—A die constructed substantially in the manner described, so that the size of the die may be adjusted by taking from or adding to the number of parts substantially as specified.

No. 53,782.—Orrin C. Burdict, New Haven, Conn.—*Nut Machine.*—April 10, 1866.—The preparatory dies give a hexagonal form to the bar before punching; detaching the connecting rod suspends work suddenly.

Claim.—First, the combination of the hinged bar A′, cam B′, and vibrating lever C′, for the purpose of arresting the movement of the slide K, without disconnecting the power from the machine.

Second, the combination of the dies E′ and H′, as preliminary shaping dies, when the said dies are combined with the herein-described nut machine, so as to accomplish the preliminary shaping before the bar so shaped is presented in front of the die box.

No. 53,783.—Thomas A. Chandler and H. C. Goodrich, Rockford, Ill.—*Thread Tension Device for Sewing Machines.*—April 10, 1866.—The devices make the tension of the thread self-regulating, and dependent on the thickness, &c., of the cloth, so as to pull the lower thread into the body of the cloth in all cases.

Claim.—First, the pivoted lever I, and jaws E, in combination with the spring *f*, arranged in the manner and operating as and for the purpose set forth.

Second, the adjustable clamp H, plate A, and pivot *l*, in combination with the spring *f*, and lever I, arranged and operating substantially as and for the purpose set forth.

No. 53,784.—Thomas Cheshire, Cincinnati, Ohio.—*Stave Machine.*—April 10, 1866.—When nearly dressed the stave edge is indented with compressed grooves; being jointed to make a smooth face the compressed portion will swell when liquid is placed in the barrel.

Claim.—Indenting or compressing into the edges of staves grooves or creases, so that the after swelling out of the wood in the casks or barrels shall make perfectly tight and strong joints, substantially as described.

Also, in combination with indenting or creasing wheels, the jointers, pivoted and made yielding on the swing or rocking plates F, substantially as and for the purpose described.

No. 53,785.—James B. Child, Lee Centre, Ill.—*Beehive.*—April 10, 1866.—The honey boxes are simultaneously raised by catch springs projecting from the vertical lifting bars connected above by a cross-piece.

Claim.—The combination of the cross-bar I′, horizontal bars I I, lifting bars G G, and spring catches H H, when each bar I is provided with two lifting bars G G, and all arranged to operate as and for the purposes specified.

No. 53,786.—Lewin A. Colbert, Baltimore, Md.—*Paper Window Shade.*—April 10, 1866.—The semi-translucent paper is attached by fabric to the rollers; is operated by a spring roller and a counter-balance weighted tassel.

Claim.—First, a window shade made of paper connected to one or more rollers by a woven fabric, and rendered translucent either before or after mounting, substantially in the manner described.

Second, the compound spring rollers and cornice box, arranged and operating substantially as and for the purposes set forth.

No. 53,787.—George J. Colby and Levi H. Thomas, Waterbury, Vt.—*Toy Boat.*—April 10, 1866; antedated March 30, 1866.—The boat is pivoted in a frame painted to resemble water and oscillates when propelled.

Claim.—A toy boat constructed in the manner as herein described, as a new article of manufacture.

No. 53,788.—A. P. Conant, Smithland, Ky.—*Water Wheel.*—April 10, 1866.—The grate has a rectangular inward flange to direct the water to the wheel, which has tangential buckets above and spiral discharge buckets below.

Claim.—The arrangement of the tangential buckets of the wheel C, curved bucket of the discharge wheel D, and L-shaped gate B, constructed and operating in the manner and for the purpose herein specified.

No. 53,789.—Theodore R. Cook, Saratoga Springs, N. Y.—*Stove Pipe Drum.*—April 10, 1866.—Within the chamber are two hollow conical frustums, which convolve the air and deliver it to follow the spiral track to its exit. Opening the damper permits the direct passage of the air.

Claim.—The radiator A, having the internal tubes B and C, spiral diaphragm *a*, and damper E, all arranged and operating substantially as herein shown and described.

No. 53,790.—Samuel Curtiss, Jr., Williamsburgh, N. Y.—*Apparatus for Administering Medicines.*—April 10, 1866.—The graduated transparent vessel has a lower reservoir to hold a dose, which is expelled into the conduit and spoon by the piston.

Claim.—An apparatus for measuring and administering medicines, constructed and arranged substantially as described and for the purpose set forth.

No. 53,791.—John Danner, Canton, Ohio.—*Broom Head.*—April 10, 1866.—The inside clamping plates face each other from opposite sides of the cap, and embrace the brush by action of screw bolts and nuts.

Claim.—In combination with a broom head having slots or openings in each of its sides, the clamping plate *c*, and through or tightening bolts *f*, for the purpose of first arranging and then tightly clamping the broom corn or other filling to the broom head, substantially as herein described and represented.

No. 53,792.—N. A. Davis, Sutton, N. H.—*Harrow.*—April 10, 1866.—The cultivator is suspended in front of the carriage wheels, is adjustable vertically and vibrates laterally.

Claim.—First, suspending the cultivator head or rake in front of the carriage wheels by means of flexible supports, so as to allow the vibration of the head laterally, and allow the same to be raised or lowerd by the levers G G to any required height to regulate the operation of the teeth.

Second, the flexible guards P, attached to the outer end of the cultivator head D, and reaching forward to near the front ends of the shafts C, for the purpose of guarding the head from contact with stones, stumps, trees, &c., as herein specified.

Third, the manner of fastening the teeth I to the cultivator or rake head D, by means of the arm R, secured in the slot T, to prevent the lateral swaying of the teeth, as specified, and in combination therewith the spiral spring S, arranged and operating as set forth.

Fourth, broadly suspending a cultivator head or rake by means of flexible supports in front of the wheels, and operating the same by means of a lever or levers from the driver's seat, as and for the purpose specified.

No. 53,793.—David Dennison, Amisquam, Mass.—*Washing Machine.*—April 10, 1866.—The fluted roller traverses the slatted bed, being supported upon a frame whose slots and springs permit vertical adjustment.

Claim.—The combination of the slatted frame C, pressure roller E, bar D, swinging arms D′ D′, bars G H, spring F, and box *f*, constructed and arranged relatively to each other, and operating in the manner and for the purpose herein specified.

Also, the arrangement of the swinging arms D D, bars G H, spring F, box *f*, and roller E, in the manner and for the purpose herein specified.

No. 53,794.—James Densmore and Amos Densmore, Meadville, Penn.—*Car for Transporting Petroleum.*—April 10, 1866.—The tanks are secured to the truck by an upper frame and stay rods. They are mounted by ladders and entered through manholes.

Claim.—The two tanks B B attached to the platform of the car A A by means of the framework C C C C and C C C C, together with the bolts 1 2 3 4 and 1 2 3 4, directly over the trucks when the same are constructed in the combination as hereinbefore described, and for the purposes set forth hereinbefore, or any other mechanical construction substantially the same and which will produce the same results.

Also, the combination and application as entirely new, and as a valuable and useful improvement.

No. 53,795.—Michael W. E. Doran, Indianapolis, Ind.—*Plumb Level.*—April 10, 1866.—The semicircular pivoted weight has a vertical index finger, and its pendent weights are intended to neutralize its perturbations.

Claim.—The construction and arrangement of a level or angle indicator by means of the plate F, with slot G, for adjusting the same across the shaft E, and having the pendants H, when operated substantially in the manner and for the purposes set forth.

No. 53,796.—Frank Douglass, Norwich, Conn.—*Button.*—April 10, 1866.—A pointed screw from the rear passes through the shank and into the disk of the button.

Claim.—A button secured by pointed screw, substantially as and for the purpose described.

No. 53,797.—James W. Epperson and Thomas W. Farrell, Woodhull, Ill.—*Clothes Dryer.*—April 10, 1866.—The head block traverses upon an endless track line which passes over both rollers. As the head block is drawn out it unwinds the cords from the drum, and by the reverse action rewinds them.

Claim.—First, the movable head block *f*, in combination with pulley *g* and hook *h*, substantially as and for the purpose described.

Second, the axle *b*, in combination with the head block *f* and the lines *l* and *k*, substantially in the manner and for the purposes described.

No. 53,798.—Horatio Fairbanks, Boston, Mass.—*Apparatus for Carburetting Air.*—April 10, 1866.—Frames covered with cloth and standing erect in a chamber support a series of reservoirs, upon which are conical perforated, metal frames covered with cloth. The air is carburetted by contact with the saturated cloth and emerges at the lower orifice.

Claim.—An improvement in apparatus for carburetting air is the reservoir A, in combination with one or more reservoirs D G, and a series of frames or plates covered with cloth, or its equivalent, and provided with suitable openings for the circulation of the air, operating substantially as set forth.

No. 53,799.—George P. Farmer, Philadelphia, Penn.—*Machine for Sticking Needles into Paper.*—April 10, 1866.—The hopper has compartments adapted to different sizes of needles, and permits their escape in rows preparatory to being placed in one paper wrapper.

Claim. - As an improvement on the machine patented July 1, 1862, the within described

box or hopper A, separated into several compartments of different sizes, and each compartment separated into other compartments by partitions *i i*, all substantially as and for the purpose herein set forth.

No. 53,800.—HENRY B. FARWELL, Boston, Mass.—*Method of Treating Leather Scraps.*—April 10, 1866.—The scraps are digested in a steam-heated vat and the resulting grease purified.

Claim.—Recovering the tallow or fatty matters from "whitenings," or scraps of leather, in the manner as set forth.

Also, in combination with the same the employment of oil of vitriol, as and for the purpose set forth.

No. 53,801.—JOSEPH W. FAULKNER, Rockford, Ill.—*Horseshoe.*—April 10, 1866.—The bifurcated springs clip the hoof and are attached to the shoe by bolt and nut.

Claim.—First, the bifurcated spring clips with two prongs, constructed, arranged and operating as described for the purposes set forth.

Second, the combination of the spring draw clip with the shoe, by means of the tranverse slot and screw-nut, so that as the clip is drawn to the shoe the shoe is tightened upon the hoof.

No. 53,802.—F. FOHR, Rowlesburg, West Va.—*Well Borer.*—April 10, 1866.—The duplication of attaching devices gives security if one fails.

Claim.—The use of a double connection between the sinker and drill, such for instance as the spring clamp and screw, or any other equivalent connection, for the purposes set forth.

No. 53.803.—JOSEPH FOSTER and EPHRAIM FOSTER, Keene, N. H.—*Musical Instrument.*—April 10, 1866.—A tremolo tone is produced by the vibration of a large reed which agitates the air passing to the reeds. It has a valve and register.

Claim.—The tremolo reed C, constructed as above shown, and applied to musical instruments substantially as described, to produce a tremolo tone for all the notes which are played while the tremolo reed is operated.

No. 53,804.—HENRY FRYATT and E. C. EDMONDS, Buffalo, N. Y.—*Sawing Machine.*—April 10, 1866.—The counterbalanced saw frame slides in horizontal ways attached to a vertically sliding block, and is reciprocated by a connecting rod, wrist, and drive wheel.

Claim.—The arrangement and combination of the vertically sliding gate C, and the horizontal ways *d d* thereon, for the tongues *g g* of the saw to slide in, substantially as and for the purpose herein specified.

Also, the combination and arrangement of the sliding gate C, and the graduated balance lever I, with its weight K, substantially as and for the purpose herein specified.

No. 53,805.—WILLARD MUNROE FULLER, Chicago, Ill.—*Amalgamator.*—April 10, 1866.—The outer cylinder is mounted on a receiver which discharges into two lower chambers through valved passages. The interior fire box supports the amalgamating kettle, which is fed from a hopper above; the air is exhausted by a pump.

Claim.—First, an apparatus for extracting gold and silver from quartz, constructed substantially as herein described, surrounding the amalgamating kettle with an annular chamber, the central space of which shall form the fire chamber of the apparatus, the said annular chamber being so arranged in relation to the kettle that the quartz or tailings may be drawn off simultaneously from all points of the circumference of the kettle, substantially as and for the purposes herein set forth.

Second, an apparatus as above described, connecting the said annular chamber with a receiving chamber into which the quartz or tailings flow, which said receiving chamber may be organized for continuous or intermittent action, substantially as herein described.

Third, in combination with the apparatus herein described, the valve placed in the feed or hopper, and constructed and arranged substantially as set forth for regulating the flow of the ore into the kettle.

Fourth, an apparatus constructed and operating as set forth, the combination and arrangement of valves whereby the automatic discharge of the tailings may be effected.

Fifth, an apparatus constructed substantially as set forth, making the doors and flues which lead from the interior of the vessel to the outside thereof, of an ogee shape—that is to say, with inclined surfaces to deflect the tailings and prevent the possibility of its accumulating and choking up the apparatus.

No. 53,806.—MILO GAGE, Medina, N. Y.—*Stove Pipe Drum.*—April 10, 1866.—The upper and lower chambers are connected by a direct central flue: when this is obstructed by the damper the heated air follows a tortuous course in the reverting smaller flues.

Claim.—The combination of the chambers C D with the tubes A B B′, the chamber D being divided into the two compartments *g h* by the partition and damper *b c* and the tubes B B′, connecting alternately with said compartments, the whole operating in such a manner as to combine the advantages of a direct and indirect draught with a large amount of radiating surface, substantially as herein specified.

No. 53,807.—THOMAS GARRICK, Providence, R. I.—*Machine for Making Eyelets.*—April 10, 1866.—The protuberance on the stationary former punch bends the disk and forces it into the hollow punch until the respective cutting faces cut out the eye. On the return motion the ejectors discharge the eyelet by pressure upon its edges.

Claim.—First, the combination of the protuberance or teat *r*, on the end of the hub or punch *t*, with the cutting edge *a*, of said punch, substantially as described for the purpose set forth.

Second, the combination of the cutting die *e* and fixed hub and punch *t*, constructed substantially as described, with the moving cleaners *b d*, constructed and operating substantially in the manner and for the purpose set forth.

Third, the combination of the mould in the movable punch for shaping the exterior of the eyelet, and the cutting shoulder 2, constructed as described, with the fixed hub or punch *t*, constructed and operating in connection substantially as described for the purpose set forth.

No. 53,808.—HENRY C. GIBSON, Camden, N. J.—*Water-proof Collar.*—April 10, 1866.—The linen is treated with white glue, white lead, linseed oil and water. A paper glazing of wax and turpentine may be added.

Claim.—A water-proof gentlemen's collar, the interior side of which is made of cloth, prepared substantially as herein described, and otherwise, and the exterior or paper side with or without glazing or enamel, made to resemble linen or other textile fabrics in use for the purpose, all as herein described.

No. 53,809.—CYRUS F. GILLETT, Sparta, Wis.—*Bag Holder.*—April 10, 1866.—The funnel is a frustum and sets in a tripod clamping the rim of the bag at the points of contact

Claim.—First, securing bags to funnel receivers by means of clamping supports B B B substantially as described.

Second, the hinged or flexible connections *a a* of the legs B, in combination with the funnel receiver A and hoop C, substantially as described.

No. 53,810.—JACOB GOODYEAR, Carlisle Borough, Penn.—*Pump.*—April 10, 1866.—The hollow piston, valved at its midlength, reciprocates at its respective ends in the induction cylinder below and the eduction cylinder above.

Claim.—The combination and arrangement of the cylinders A and A′, B and B′, the valves *a* and *a′*, the rims *m* and *m′*, and the India-rubber rings C and C′, as and for the purposes set forth and described.

No. 53,811.—G. F. GOUDY and T. M. GOUDY, Independence, Ohio.—*Sheep Rack.*—April 10, 1866.—The covers may be lowered by shaft and chains so as to close access to the feed racks.

Claim.—First, the adjustable covers B, arms or links *a′*, and chains *f f′*, in combination with the shaft G and rack, substantially as and for the purpose set forth.

Second, in combination with the above, the adjustable guards H and cords *n*, substantially as and for the purpose set forth.

No. 53,812.—JAMES GRANGER, Zanesville, Ohio.—*Paddle Wheel.*—April 10, 1866.—The paddle arms are pivoted to a revolving endless chain, which passes over wheels; the paddles receive a positive circular sweep while submerged.

Claim.—The combination of the paddles H, arms I I, connecting holders M, bridge pieces J, endless chain G, and pulleys D E, constructed and arranged in the manner and for the purpose herein specified.

No. 53,813.—CHARLES E. GRIFFIN and THOMAS MARSH, Smithfield, R. I.—*Step for Spindles.*—April 10, 1866.—The step fits into a socket; an intervening space is occupied by oil which circulates past the revolving spindle through holes in the step.

Claim.—The independent step for spindles B, in combination with a close oil chamber *a b*, substantially as described.

No. 53,814.—W. E. GRIMES, Allen, Mo.—*Hay Rack.*—April 10, 1866.—The frame is made in sections braced; a ladder in front, and a boom pole depressed by a rope and windlass, form a compressor for the load.

Claim.—The arrangement of the sections A C L and D, with the windlass H and pole E, as and for the purpose herein specified.

No. 53,815.—VICTOR M. GRISWOLD, Peekskill, N. Y.—*Process and Compositions for Printing Photographic Pictures.*—April 10, 1866.—The opal collodion is composed of alcohol, ethers, gums, kowrie, and shellac, solution of cotton, castor oil and glycerine. The sensitizing solution, water, alcohol, muriatic acid, chloride calcium, chloride ammonia, bi-chloride mercury. The enamel, gum shellac, borax, water, linseed oil, sulphuric acid, albumen.

Claim.—First, as a new article of manufacture the photographic surface described with or without the opal picture enamel.

Second, the composition of the opal collodion, by the formula No. 1, and in the manner hereinabove set forth, or in any manner substantially the same.

Third, the fuming of the plate over a mixture of ammonia, alum, and unslaked lime, as hereinabove set forth.

Fourth, the composition of the sensitizing solution by the formula No. 2, and in the manner hereinabove set forth, or in any manner substantially the same.

Fifth, the composition of the opal picture enamel by the formula No. 3, and in the manner hereinabove set forth, or in any manner substantially the same.

Sixth, the combination, in the process of manufacture, of the opal collodion, sensitizing solution, and picture enamel hereinbefore described, as and for the purpose hereinabove set forth.

Seventh, the process hereinabove described for preparing and finishing an opal surface for photographic purposes.

No. 53,816.—TIMOTHY GUILFORD, Cheshire, Conn.—*Machine for Pressing Glass Buttons.*—April 10, 1866.—The concave die has a central spindle, with a socket for the shank of the button surrounded by two cylinders, which give way in succession when the punch descends, so as to leave no feather edge on the button.

Claim.—A die constructed in several parts substantially in the manner described, in combination with the punch F and follower E, as and for the purpose specified.

No. 53,817.—JAMES C. HADDEN, New York, N. Y.—*Letter File.*—April 10, 1866.—The bent wires are brought into parallelism while the papers are impaled and then rotated 90°, opposing a flat side to the withdrawal.

Claim.—A file for letters, newspapers, &c., in which two or more angular-shaped holding pins, or staples, therefor are used, and arranged so as to operate substantially in the manner described.

Also, in combination with the above, projecting the opposite cover of the book to that in which the letter-holding pins are used, by means of a metallic plate or plates, or other suitable material, substantially as described.

No. 53,818.—JOEL A. HALL, Columbus, Ohio.—*Cane Stripper.*—April 10, 1866.—The curved knives with bevelled inner edges are arranged in pairs to embrace the stalks and expand by their own elasticity; the stalks are conducted by concave-faced rollers.

Claim.—First, securing the stripping knives together in pairs by means of elastic or non-elastic holders C C, applied to their extremities, substantially as described.

Second, the construction of the cutting portions of the knife blades G G with curved edges *g g*, substantially as described.

Third, providing for adjusting and setting the guide rollers D D nearer to or further from each other, said rollers being applied to the elastic knife blades, substantially as described.

No. 53,819.—*Lantern.*—JOHN O. HARRIS, Reading, Penn.—April 10, 1866.—A perforated cap is fitted to the top of the chimney and secured inside the jacket; air enters the base of the frustum around the lamp.

Claim.—First, the cap E on the top of the globe A of the lantern, closed at its upper end, and provided with lateral openings *c*, in combination with the jacket F, closed at its upper end and provided with lateral openings *e*, and also provided with a conical flange G, at its lower end having a perforated partition plate, substantially as and for the purpose set forth.

Second, the conical base B provided with perforations *b* in its bottom, in combination with the jacket F and cap E at the upper part of the lantern, substantially as and for the purpose specified.

No. 53,820.—DAVID G. HASKINS, Cambridge, Mass.—*Gas Heating Apparatus.*—April 10, 1866.—Gas burners are arranged beneath openings in an inner cylinder, whose heat and that of the wire gauze structures above is imparted to the current of air passing between the cylinders.

Claim.—First, the application, substantially after the manner herein described, of the flame of any gas, or of any oil, or fluid, to the heating of a current of air which may be introduced from without into rooms, apartments, or buildings.

Second, the combination with an outer casing A and an inner chamber B of heat-retaining and radiating devices, substantially as and for the purpose set forth.

No. 53,821.—S. S. HEPWORTH, Boston, Mass.—*Smiths' Vice.*—April 10, 1866.—The vice screw is covered by a sleeve; the elongated nut is attached by a collar to its jaw, and slips within the sleeve.

Claim.—The sleeve B, in combination with the nut A, connected to the movable jaw E, operating as and for the purpose described.

No. 53,822.—JOHN A. HEYL, Boston, Mass.—*Railroad Switch for Street Cars.*—April 10, 1866.—An extra double flanged wheel is sleeved upon the axle, and by engagement with a middle switch rail deviates the car.

Claim.—The arrangement of the double flanged wheel C and attached wheel *d*, operated by levers *e* and *f*, upon and in combination with the axles of a car, as described, and operated with the said double-flanged wheel, astride of the guide rail, substantially as described.

No. 53,823.—SIMEON HEYWOOD, Claremont, N. H.—*Shingle Machine.*—April 10, 1866.—The block is fed upon an oscillating carriage to the saw, which cuts alternate butts and points; sliding inclined planes operate the timber bed.

Claim.—In a shingle or other machine, the arrangement of the bars A A, the movable bars B B, the inclined planes C C C C, the racks K K, the pinion J, applied to the tilting bed, as and for the purposes set forth.

No. 53,824.—GEORGE HILLEGASS, Philadelphia, Penn.—*Lamp Burner.*—April 10, 1866.—The distance apart of the side plates is adjusted by screws; pivoted wings determine the spread of the flame.

Claim.—First, in combination with the sides B B the wings C C, substantially as and for the purpose set forth.

Second, in combination with the sides B B, a device for adjusting the width of the aperture, substantially in the manner and for the purpose set forth.

No. 53,825.—LEONARD HOLTZSCHEITER, Philadelphia, Penn.—*Polishing Wheel.*—April 10, 1866; antedated March 25, 1866.—The grooved disk has a peripheral belt formed of leather strips, connected and presenting their ends outward.

Claim.—The polishing wheel, consisting of a disk A, of wood or other suitable material, and a series of strips D, of leather, packed and cemented together and into a groove in the periphery of the said disk, all as set forth.

No. 53,826.—NICHOLAS B. HOOPER, Newark, N. J.—*Hat Pressing Machine.*—April 10, 1866.—The blocked hat revolves on a turn-table; the irons are pendent from an upper bridge-frame, and their pressure is regulated by levers and counterweights; the irons are heated by gas-burners.

Claim.—First, a revolving hat block, in combination with a series of irons, constructed and operating so as to be self-adjusting in conforming to the sizes and shapes of different hat blocks, and capable of simultaneously pressing the "tip," "side-crown," and "brim," substantially as and for the purposes set forth.

Second, the pivoted hanging frame H, when so constructed and arranged as to support and act in combination with a series of irons and their operating devices, capable of pressing the "side-crown," "tip," and "brim," substantially as specified, for the purpose of simultaneously removing all of the irons from the hat by swinging the frame aside.

Third, the rod J, carriage L, and levers K and M, in combination with an iron I, substantially as specified, for the purpose of producing a self-adjusting vertical and lateral pressure of said iron upon the "tip," and "square" of a hat, upon a revolving hat block.

Fourth, the slotted lever T, rods *n* and Q, and lever R, in combination with the frame H and an iron P, substantially as specified, for the purpose of producing a self-adjusting vertical and lateral pressure of the said iron upon the "brim" and "band" of a hat, upon a revolving hat block.

Fifth, the combination and arrangement of lever Z, rods Y and *t*, plate X, springs *u*, and an iron V, substantially as specified, for the purpose of producing a self-adjusting lateral pressure upon the "side-crown" of the hat, yielding in conformity to the oval shape of the side-crown of the hat block.

Sixth, an iron V, when provided with the partition *d'*, opening *e'*, and burner *f'*, substantially as and for the purposes set forth.

Seventh, the combination and arragement of the frame H, levers K R M T Z, irons I P V, table A B, and block plate D, substantially as and for the purposes set forth.

No. 53,827.—SAUNDERS HUBBELL, Jr., Urbana, Ohio.—*Catch for Money Drawers.*—April 10, 1866.—The catch which releases the counter drawer is worked by a foot trigger.

Claim.—First, the catch E, the rod F, and the spring arm G, when operated substantially as and for the purpose described.

Second, the drawers C D when combined with the catch E, substantially as described and for the purpose specified.

No. 53,828.—WINFORD R. S. HUNTER, Blackberry, Ill.—*Attaching Thills to Carriages, &c.*—April 10, 1866.—The slotted thill iron slips over its spindle; a depressor spring maintains the connection.

Claim.—First, the employment of a spring C, in combination with the slotted thill head or iron, substantially as described and for the purposes specified.

Second, providing the slot *a* with the recess *c*, as and for the purposes set forth.

Third, the combination of the spring C, the bolt or pin E, and thills A, provided with a slot *a*, arranged as and for the purposes specified.

No. 53,829.—Joshua K. Ingalls, New York, N. Y.—*Oil Tank.*—April 10, 1866.—The water in the submerged tank is displaced by oil introduced from above; the stratum of water escapes by rising through the jointed discharge pipe.

Claim.—First, the means of relieving the pressure within the tank or vessel, substantially as described.

Second, the jointed arm *c*, or any equivalent device operated to regulate or adjust the pressure within the tank or vessel.

Third, the strainer or sprinkler T, arranged as shown and operated in connection with the relief pipe, as described.

No. 53 830.—Francis X. Kaffer, Champaign City, Ill.—*Hame.*—April 10, 1866.—The trace loop is adjusted vertically in the notches of the hame staple, being retained therein by a flat spring.

Claim.—The combination of the notched staple *a* with the flat spring *b*, substantially as and for the purposes described.

No. 53,831.—Charles Kane and James Kane, Pittsburg, Penn.—*Bolt Heading Machine.*—April 10, 1866.—The socket of the dies is larger in its perpendicular than in its horizontal diameter; the shank is pressed between two opposite surfaces and is rotated 90° at each operation.

Claim.—First, the dies I and K, having their pressing surface at right angles with the centre of their motion, and having projecting ledges or shelves *i i* and *k k*, so that when the dies come together they leave between them a parallelopipedic space, the dimension of which is greater in a direction perpendicular to the line of motion of the dies.

Second, the cutters M and N, in combination with the pressing dies I and K, arranged in the manner and for the purpose specified.

No. 53,832.—Charles Kane and James Kane, Pittsburg, Penn.—*Bolt Machine.*—April 10, 1866.—The blank is upset by one pair of dies forming an enlargement circular in cross section; the second pair swage a portion of this into a square shank, the remainder forming the head.

Claim.—A bolt machine having a double set of dies, one above the other, in the one of which to stave and in the other to cut the square neck of the bolt and head, the same arranged and operating substantially as described.

No. 53,833.—Lewis Katen, Brooklyn, N. Y.—*Combination Ruler, Blotter, and Paper Cutter.*—April 10, 1866; antedated March 30, 1866.—On the upper surface of the ruler is a pivoted blotting cylinder.

Claim.—The arrangement of the plate and the uprights in combination with the revolving blotter, the whole so arranged and constructed that they may be used for the various purposes herein set forth and described by simply reversing the position of the article.

No. 53,834.—Jonathan H. Kenyon, Sempronius, N. Y.—*Beverage.*—April 10, 1866.—Extract of birch, oil of wintergreen, and whiskey.

Claim.—Birch nectar, compounded of the ingredients herein described.

No. 53,835.—Solomon Kepner, Pottstown, Penn.—*Bread and Meat Cutter.*—April 10, 1866.—The vertically adjustable holder clamps the object while the saw-edged guillotine knife descends.

Claim.—The combination of the holder F with the frame C and knife H, substantially as described, and for the purpose set forth.

No. 53,836.—Dallas Knowlton, Liberty, Maine.—*Tree Protector.*—April 10, 1866.—The plate forms a frustum around the trunk, its edges being lapped and keyed.

Claim.—A tree protector, having plate A cut open on one side as represented, and having apertures C therein, with pin D, all constructed and arranged substantially as herein specified, as a new article of manufacture.

No. 53,837.—John Lacey, Chicago, Ill.—*Cultivator.*—April 10, 1866.—The cultivator frame is free to move vertically, and is pivoted to the wheeled frame; anti-friction rollers intervene between them.

Claim.—First, attaching the shovels to beams having an independent vertical movement, and so connected to the movable frame L H, that by moving the latter sidewise all the ploughs are moved with it, said movable frame being pivoted at *h*, substantially as and for the purpose set forth.

Second, interposing the conical rollers *a* between the fixed and movable frames, to enable the latter to be more easily operated, as shown and described.

No. 53,838.—Richard Lambert, Cortland Village, N. Y.—*Hand Corn Planter.*—April 10, 1866.—The seed box is attached to the hoe handle; the capacity of the pocket in the feed

slide is adjusted by a screw. The slide operates in the double bottom of the seed box, and is operated by a draught rod and return spring.

Claim.—First, in combination with the slide G, and rod F, the adjustable block H, substantially as and for the purpose set forth.

Second, the arrangement of the case B with the double bottom M M′, the slide G, rod F, and spiral springs I I, substantially as described.

No. 53,839.—Theodore F. Lehmann, Allegheny, Penn.—*Method of Recovering Waste Alkali used in the Manufacture of Paper.*—April 10, 1866.—Carbonic acid passed through the solution converts the caustic alkali into a carbonate; this is evaporated, crystallized, calcined, dissolved, and re-rendered caustic by the exhibition of lime.

Claim.—Converting the unspent caustic alkali of alkaline solutions into a carbonate of the same by artificial application of carbonic acid.

No. 53,840.—Frank Liburn, New York, N. Y.—*Steering Screw.*—April 10, 1866.—A small steering screw precedes the propeller, being revolved by the former in an aperture of the dead wood. The steering screw has its bearings in a horizontal arm projecting from a vertical shaft, whose rotation adjusts in a horizontal plane the axis of revolution of the screw, assisting in propulsion when in line with the propeller, and bearing laterally when otherwise.

Claim.—First, the arrangement of the shaft D, the beam E, and cord *e*, gear wheel F, and shaft G, constructed and used as and for the purpose herein specified.

Second, arrangement of the bars H and K with the toggle joint and propeller B, as and for the purpose herein specified.

Third, the combination of the propeller B with the steering propeller C, when the two are connected and arranged to operate by the means substantially as herein specified.

No. 53,841.—James Lloyd, Springfield, Ohio.—*Measuring Funnel.*—April 10, 1866.—A disk valve rotated by an axial shaft is situated between the spout and measuring portion of the funnel. Air escapes upward through a tube in the spout with lateral eduction.

Claim.—First, the combination with a funnel of a measure index, and the turning or sliding valve E, and its valve seat, substantially as set forth.

Second, in combination with a funnel measure a movable gauge or scale J, as and for the purpose set forth.

Third, in combination with the sliding valve E, and the funnel measure A, the movable gauge or scale J, substantially as set forth.

Fourth, in combination with the funnel measure A, and the sliding valve E, the air tube K, located within the spout, so as not to impair the exterior cylindrical form of said spout.

No. 53,842.—Edwin Lockwood and George W. Pitman, Bordentown, N. J.—*Car Seat.*—April 10, 1866.—The movable car seat is supported by detents, and is adjustable vertically on either side. The back is shiftable. The pivoted foot rest is supported by bows and may be stowed away under the seat.

Claim.—First, the detachable back B, united with the frame through the arm pieces C, by means of the hooks D and brace E and catch G F, so as always to maintain the same relation to the seat A, substantially as set forth.

Second, in combination with the detachable backs B, a double system of rods and levers, so as to make either side of the seat adjustable, substantially as set forth.

Third, in combination with the levers K, the rods M M′, when arranged substantially as and for the purpose set forth.

Fourth, in combination with the rods L and L′, a series of detents I and the fixed rod P, operating as a stop, so arranged that a greater or less inclination can be given to the seats A, substantially as set forth.

Fifth, the adjustable foot rest S, arranged substantially as and for the purpose set forth.

No. 53,843 —Charles B. Loveless, Syracuse, N. Y.—*Apparatus for Carburetting Air.*—April 10, 1866.—The carburetting chamber is submerged in a water tank, receives its oil by an exterior feed pipe, and its air from an inverted gravitating holder, whose rim is submerged in the tank.

Claim.—First, placing the oil and gas chambers under water in the tank, substantially as described and for the purposes specified.

Second, the closed cylinder C, containing the oil and air chambers, substantially as set forth.

Third, the glass indicator G, constructed and operating substantially as described.

Fourth, the oil feed pipe F, passing in part through the water, substantially as described.

Fifth, the supply gas pipe L, passing in part through the water, substantially as described.

Sixth, the tank A and blower B, in combination with the closed cylinder C, substantially as described.

No. 53,844.—Philip Lutes, Platte City, Mo.—*Washing Machine.*—April 10, 1866.—Explained by the claim.

Claim.—First, the structure of the upper portion of the washing machine, consisting of

the central piece or lid A′ and the hinged end pieces A^2 A^2, with the intervening spaces or openings G G, as set forth.

Second, the combination and arrangement of the concave tub A, rollers B, rubber C c', arms C′ C′, handle C^2, bearings D, central piece or lid A′, hinged end pieces A^2 A^2, and intervening spaces or openings G′ G′, the whole being constructed and operating substantially as and for the purposes described.

No. 53,845.—James W. Maloy, Boston, Mass.—*Machine for Cutting and Finishing Marble.*—April 10, 1866.—The feeding tables, by simple or compound motions, present the marble in the required line of motion to the revolving tool. The cutting tools are changed as the work progresses, some having perforations to supply abrading material.

Claim.—First, the combination of a revolving tool or tools with a feeding table or platform, susceptible of two motions, one tangential to the circle described by the said revolving tool or tools, and the other at right angles to that of the first, as set forth and for the purpose specified.

Second, the combination of the two travelling tables or platforms, operating together as described.

Third, so arranging and operating the table or platform that supports the marble or other material to be acted upon, as to convey the latter automatically to the revolving tool or tools.

Fourth, the arrangement of the clutch nut d' d', screw shaft q' q', revolving shaft i i, and vertical shaft b b, operating as described, for the purpose of feeding the travelling table along and yet permit its disengagement from the said devices, as specified.

Fifth, the use of the adjustable lever swivel clamp, for holding the material to be acted upon firmly in its place, as described.

Sixth, the use of a revolving grinding or rubbing cylinder, so arranged and constructed as to contain the grinding material and deliver it through apertures to the material to be acted upon, as set forth.

Seventh, in combination with the revolving grinding or rubbing tool, the pronged lever arm h'' h'', for the purpose specified.

Eighth, the arrangement of devices for feeding the revolving tool or tools up and down, the same consisting of the screw shaft q' q', screw nut o' o', and the shaft t t, as described.

Ninth, the arrangement of devices for holding the sectional cutters in their place, and so that they can readily be inserted or removed, as specified.

No. 53,846.—Judson Mattison, Oswego, N. Y.—*Friction Coupling.*—April 10, 1866.—The India-rubber surfaces clamp by frictional contact. The ducts are arranged to keep the oil from the gum.

Claim.—As my invention and improvement in friction couplings for shafting and machinery, the use and application of vulcanized India-rubber, as an elastic friction substance, to be used in the manner and for the purpose specified.

Also, the construction and arrangement of the oil vessels or canals S and V, with their drains or holes T and Z, for the purpose set forth and described.

No. 53,847.—Nathaniel Ridley Eaves Mayer, Chester Court House, S. C.—*Soap.*—April 10, 1866.—Hard soap, lye, turpentine, and ammonia.

Claim.—The composition in washing clothes and other articles, prepared substantially as described for the purpose set forth.

No. 53,848.—George D. McClure, Denver Station, Ill.—*Cornstalk Cutter.*—April 10, 1866.—Blades are attached by arms to a horizontal shaft, which is revolved by contact with the ground, and has a spring pressure on its bearings.

Claim.—An improved cornstalk cutter, constructed and arranged substantially as described and for the purpose set forth.

No. 53,849.—William C. McGill, Cincinnati, Ohio.—*Apparatus for Stripping Corn from the Cob for Table Use.*—April 10, 1866.—The roasting ear is erected upon a spike in the dish; the corn is stripped from the cob by a handled cutter with curved, lapping, spring blades.

Claim.—The combination of the spike plate with the sheller, operating substantially as and for the purpose herein set forth.

No. 53,850.—Anthony Mero, New Haven, Mich.—*Harrow.*—April 10, 1866.—The vertical posts of the rotary harrows have free oscillation in their bearings in slots of the forked bridge-piece, to which the draught bars are attached, and which supports the driver's seat.

Claim.—First, the construction of the bridge bar B, with slotted and forked ends, adapted for receiving and serving as bearings for the central turning posts b b of the harrows, substantially as described.

Second, the combination of the forked drag bars C C with the forked bridge bar B and the central posts b b, substantially as described.

Third, the combination of the seat E with the forked bridge bar B and rotary harrows A A, substantially as described.

No. 53,851.—Isaac H. Merritt, Cincinnati, Ohio.—*Cotton Bale Tie.*—April 10, 1866.—Each lug of the double-headed key passes through holes in both bands, but the strain of each band is on its respective lug.

Claim.—The combination of the band A and key C when so arranged that the separate lugs of the single key shall detain the respective ends of the band, substantially as described and represented.

No. 53,852.—Granderson Mershon, Brookville, Iowa.—*Medical Compound.*—April 10, 1866.—Rain water, 1 pint; sulphate of zinc, 60 grains; acetate of lead, 40 grains; nitrate of silver, 25 grains; golden seal, 50 grains; sulphate of morphia, 15 grains; salicin, 10 grains

Claim.—Combining the above-named substances in such proportions that the medicinal virtues of each are greatly increased, forming a specific for inflammatory diseases of the eyes.

No. 53,853.—Frederick Metz, Lyons, N. Y.—*Bed Bottom Connection.*—April 10, 1866.—The slats are pivoted in links, supported by elastic straps from the bed rails.

Claim.—The combination of the socket D with the head E and bearing *a* of the clasp or plate C, said socket and head being provided with the groove and tongue *c d*, or equivalent, and the whole arranged in connection with the slats A in such a manner as to allow them to turn to opposite positions, substantially as specified.

No. 53,854.—John C. Miller, Louisville, Ky.—*Spring Saddle.*—April 10, 1866.—The seat is suspended above the tree, from springs attached to the pommel and cantle.

Claim.—Constructing the seat of the saddle separate from and independent of the bars of the tree, and hanging the said seat upon the ends of springs at a distance of several inches above the bars of the tree, all constructed as herein described and set forth.

No. 53,855.—Samuel C. Moore, Boston, Mass.—*Machine for Seeding Raisins.*—April 10, 1866.—The fruit is exposed in a grated hopper to the revolving cylinder teeth, which project within the bars.

Claim.—The spiked or toothed cylinder B, in combination with the grate or open frame cylinder H, arranged to work together substantially as described for the purposes set forth.

Also, in combination with the cylinder H, the scraper L, arranged inside of the cylinder.

Also, in combination with the toothed cylinder B, the prongs S for removing the fruit from the teeth of the cylinder.

Also, in combination with the toothed cylinder B, the rack of teeth R for removing the stones and seeds and pits from the teeth Q.

No. 53,856.—J. C. Murphy, Mendota, Ill.—*Farm Gate.*—April 10, 1866.—The gate is slipped open longitudinally till it is poised on a caster wheel swivelled to the post; it is then rotated 90°. After being brought into line in closing, a wheel on its outer end descends a track to assist its closure.

Claim.—A gate constructed substantially as described, in combination with the wheel *c*, track *d*, hook M, pulley H, and inclined bars *a b*, arranged and operating as and for the purpose specified.

No. 53 857.—Ira Orndorff, Russelville, Ky.—*Loom.*—April 10, 1866.—The peripheral sections of the pattern wheel are changed to vary the pattern. Each of the adjustable and changeable face cams acts upon its corresponding shuttle.

Claim.—First, the changeable sectional pattern wheel, when the sections are changed and held in place, substantially in the manner and for the purpose specified.

Second, the adjustable cams, arranged on the side of the disk as shown in Figs. 7 and 8, to change the shuttle boxes, substantially as and for the purpose set forth.

No. 53,858.—Ira Orndorff, Russelville, Ky.—*Loom.*—April 10, 1866.—The set of shuttle boxes slides on the lay, whose vibration changes their position. A fixed pawl turns a ratchet wheel on the lay, and revolves intermittingly a pattern cam which actuates the boxes.

Claim.—First, the combination of the changing shuttle boxes with the lay, arranged and operated substantially in the manner and for the purpose set forth.

Second, changing the shuttle boxes of looms by a pattern cam and ratchet, combined, arranged, and operating substantially in the manner and for the purpose described.

No. 53,859.—J. A. Pain, Clyde, N. Y.—*Awning.*—April 10, 1866.—The jointed rod forms the extension rib for the awning; by flexure of the rod, and upward vibration of the outer bar, the slot is closed, at which the awning issues from the box.

Claim.—The arrangement of the jointed rod *l m n*, the enclosed drum *d*, and operating cord *p*, substantially as described and represented.

No. 53,860.—NELSON PALMER, Hudson, N. Y.—*Threshing Machine.*—April 10, 1866.—The concave is closed upon the cylinder by eccentrics; resilient slabs are placed between the bars of the concave.

Claim.—First, the eccentric bolts G, or their equivalents, to regulate the relations of the concave to the cylinder, substantially as set forth.

Second, springs of rubber, or other material, when placed between the slats to give elasticity to the movements of the concave, substantially as and for the purpose set forth.

Third, the board H, when used substantially as and for the purpose set forth.

Fourth, the board H′ when used in combination with the cylinder A and board H, substantially as and for the purpose set forth.

No. 53,861.—DAVID PARKER, Shaker Village, N. H.—*Method of Preserving and Drying Green Corn on the Cob.*—April 10, 1866.—The roasting ear is scalded and dried by heated currents of air.

Claim.—The drying and preserving of green or unripe corn on the cob, by first scalding or partially cooking it, and then drying it rapidly by artificial heat in ovens or drying chambers until all the moisture is driven off from the grains and cob, substantially as herein described.

No. 53,862.—E. G. PASSMORE, Jr., Philadelphia, Penn.—*Harvester.*—April 10, 1866.—The cutting apparatus and the revolving sweep are simultaneously started or stopped, and the rake adjusted relative to the platform when the position of the latter is changed.

Claim.—First, the sliding shaft D, its bevel wheel L gearing into a wheel L′ on the rake shaft, in combination with the gearing herein described, or the equivalent to the same, for operating the cutters, the whole being arranged for the simultaneous stopping and starting of the cutting apparatus and rake, substantially as herein described.

Second, the studs *q*, made adjustable on the arms N, and adapted to the flanged cam, substantially as and for the purpose specified.

No. 53,863.—R. R. PATTISON, Springfield. Ill.—*Knife and Fork Scourer.*—April 10, 1866.—The knives are laid parallel upon the bed and the scourer reciprocates above.

Claim.—First, the scourer I, or its equivalent, hung within a frame or holder having a suitable handle for moving the same, in combination with the bed B upon which the knives or forks are laid, when arranged together substantially as and for the purpose specified.

Second, in combination with the above, the perforated receptacle or reservoir *a* for the scouring material, when secured to the scourer or its holder in such a manner that, as it moves over the knives or forks, it will throw the scouring material upon the same, substantially as described.

No. 53,864.—JAMES H. PEASE, Reading, Penn.—*Feed Water Apparatus.*—April 10, 1866.—The injector and pump are so combined with the feed pipe that the same induction will feed one or both of the devices for injecting water into the boiler. The stop-cock is so combined with the overflow orifice of the injector as to regulate its action.

Claim.—First, the arrangement of the injector of a locomotive or other boiler, in combination with the feed pipe of its force pump, when such pipe has a suitable stop-cock for opening or closing the communication through the same, substantially as and for the purpose specified.

Second, the combination of the feed pump and the injector, whereby to supply water to a locomotive or other boiler by one set of pipes and connections, substantially as herein described.

Third, the stop-cock, in combination with the discharge orifice of the injector overflow, for the purposes specified.

No. 53,865.—HENRY PEMBERTON, Allegheny, Penn.—*Saponifier.*—April 10, 1866.—Explained by the claim.

Claim.—The use of the aluminates of soda or potassa, either with or without admixture of the hydrates of those alkalies in the manufacture of saponifier or concentrated lye, substantially in the manner hereinbefore described.

No. 53,866.—L. W. PERKINS, Beloit, Wis.—*Buckle.*—April 10, 1866.—The leather is clamped between the jaw on the end of the lever and the corrugated under surface of the transverse bar. The proximity of the jaws is regulated by an interposed strip.

Claim.—First, the frame A and lever B, constructed and arranged to operate in the manner and for the purposes herein set forth.

Second, the removable strips *e*, in combination with the jaw D, and lever B, for the purpose of adjusting the jaw, as described.

Third, making the faces of the jaws C and D corrugated or roughened for the purpose of holding the straps more securely, as set forth.

No. 53,867.—GEORGE PERRY, Muscatine, Iowa.—*Cultivator.*—April 10, 1866.—The four shares are vertically adjustable by foot levers, and the two inner shares laterally adjustable by hand levers.

Claim.—First, the adjustable beams C C, in combination with the slotted cross-bar A, and the slotted braces and notched latches M M, substantially as and for the purposes set forth.

Second, the foot levers G G, in combination with the supplementary frame, substantially as and for the purposes set forth.

Third, the buttons O O, attached to the frame D D, and rigidly securing the supplementary frame either up or down when desired, substantially as and for the purposes set forth.

Fourth, the levers H H, and the parallel bar I, in combination with the hinged standards of the interior shovels and oscillating beams C C, the latter being also adjustably attached, substantially in the manner and for the purpose set forth.

Fifth, the mode of attaching the standards of the interior ploughs by the jaws L L to the beams C C, substantially as and for the purposes set forth.

Sixth, a hinged shovel attached to the standard by a wooden pin, substantially in the manner and for the purpose set forth.

No. 53,868.—BANJAMIN PORTER, Jackson, Mich.—*Machine for Grinding Clay.*—April 10, 1866.—Several vertical armed shafts are arranged around the central shaft and receive motion from it by gear wheel and pinions; a face cam on the lever end of the central shaft works the rock shafts which eject the moulds.

Claim —In combination with the central grinding shaft G, and box D, the auxiliary grinding shafts H H, substantially as described.

Also, the cleats or pieces *d d*, on the inside of the box, substantially as described for the purpose set forth.

Also, the combination and arrangement of the rock shafts T T, arms U U, slides V V, arms X X, and cam *a*, to push out the moulds when required.

No. 53,869.—ROBERT RALSTON, Kalamazoo, Mich.—*Instrument for Seizing and Holding Small Animals, as Sheep, Hogs, &c.*—April 10, 1866.—The curved and pivoted jaws are distended by a rod whose disengagement causes their collapse by the spiral screw on the shank.

Claim.—First, the jaws being held distended by the brace or its equivalent, preparatory to its being fastened upon the leg.

Second, the points of the jaws passing each other, thus allowing them to fit closely to the leg of a small or large animal.

Third, the combination and arrangement of the machine, substantially as and for the purposes set forth.

No. 53,870.—JOHN C. RANKIN, Mount Vernon, N. Y.—*Sash Fastener.*—April 10, 1866.—A headed bolt on the lower sash traverses a slot on the upper one, the slotted plate on the latter embracing the shank of the bolt.

Claim.—The slotted plate B and the slide E, or their equivalents, applied to the sashes of a window, substantially as described.

Also, the slide E, with its notches *d d*, spring F, and button *e*, box C, and the plate B, provided with the vertical slot *a*, and cross slot *b*, all arranged and applied to the sashes, substantially as described.

No. 53,871.—THOMAS S. RAY and SAMUEL E. CLEVELAND, Buffalo, N. Y.—*Locomotive Head Light.*—April 10, 1866.—Explained by the claim.

Claim.—First, in a locomotive head light lamp for burning petroleum or coal oil, having a cylindrical wick tube, a top shield and deflector, so constructed and placed upon the wick tube as to form a combustion chamber above and around the base of the flame, a circular opening made through the shield and below the deflector for the purpose of admitting air directly to and slightly below the base of the flame, substantially as described.

Second, in a locomotive head light lamp having a cylindrical wick tube, leaving the bottom of the wick tube open so as to admit the air free and unobstructed into the wick tube to supply the inside flame in combination with an outside case which admits air through perforated openings in its bottom, or through openings which cause the air to take an indirect route in its passage into the case, for the purposes and substantially as described.

Third, in a locomotive head light lamp having a cylindrical wick tube and a shield or cap around the top of the burner, a free, unobstructed and direct passage for the air through the shield to the outside base of the flame, in combination with perforated openings through the bottom of the case, or with openings which cause the air to take an indirect route into the case, for the purposes and substantially as set forth.

Fourth, the combination of a cylindrical wick tube left free and open at the bottom for admitting air to the inside of the flame, with a deflector placed on the top of the wick tube for deflecting the air to the outside of the flame, substantially as set forth.

No. 53,872.—OWEN REDMOND, Rochester, N. Y.—*Harvester.*—April 10, 1866.—The devices described dispense with ratchets and pawls in the driving wheels arranged to disengage when backing.

Claim —Engaging the gearing with and disengaging it from the driving shaft C, by means of the loose sleeve *b*, double couplings *d d'*, springs *e e'*, and turning sleeve *a*, the whole arranged, combined and operating substantially as and for the purpose herein set forth.

Also, the combination of the connecting bar K, and standard I, with the finger beam G, the bar being jointed at *s*, and the standard forming a stiff connection with the finger beam, or an extension thereof, and the whole being so arranged that a simple lifting of the finger beam will elevate its outer end to a greater degree than its inner end, substantially as described.

Also, the wedge slide *o*, in combination with the heel projection *q* of the finger beam, for the purpose of stiffening and sustaining the latter before it is raised, substantially as described.

Also, the combination of the slide *o*, rock lever N, lever L, and link *u*, whereby the slide is first pressed forward to stiffen the finger beam, and the latter is then raised, substantially as specified.

Also, supporting the shoe Q by the grasp wheel or truck T, in connection with making said shoe adjustable higher or lower by the screw *h'*, resting on the shank or bearing *g'* of the wheel, the whole arranged, combined and operating substantially as set forth.

No. 53,873.—DAVID REEVES, South Pass, Ill.—*Evaporator.*—April 10, 1866; antedated April 7, 1866.—The partitions and the bottom are not united, but by the lowering of the latter a communication may be established without transferring the froth or feculent upper stratum.

Claim.—First, the employment or use, in a sugar-evaporating pan, of a bottom F, and partition E, arranged in such a manner that a communication may be formed between the several compartments, and the communication cut off when desired, by the moving of the bottom in contact with and from the lower edges of the partitions, substantially as specified.

Second, the packing *a*, inserted in the lower edges of the partitions, substantially as and for the purpose set forth.

No. 53,874.—GEORGE RICHARDSON, Lowell, Mass.—*Flyers for Spinning.*—April 10, 1866.—The arms of the flyer are bowed outward and are segmental in their transverse section, diminishing towards their ends. The bobbin is lightened by doffing its head.

Claim.—The elliptical form and semicircular shape of the arms *b*, as herein specified, and for the purpose set forth.

Second, the headless bobbin *d*, in combination with a flyer, constructed as herein described.

No. 53,875.—EDWARD S. RITCHIE, Brookline, Mass.—*Mariner's Compass.*—April 10, 1866.—Two air-tight cylindrical parallel magnet cases are connected by a transverse bar which rests upon the pivot. The card is represented by a divisional ring surrounded by an annular float; the divisions are marked upon the inner surface of the inclined ring.

Claim.—The combination of the annular float and one or more magnets, and the encompassing case or cases thereof.

Also, the combination of the divisional ring, the annular float, and one or more magnets, and the encompassing case or cases thereof.

Also, the arrangement of the divisional ring and the annular float, so that the ring may make a part of the hollow float.

Also, the arrangement of the divisional ring in another respect, viz., so as to incline to the plane of the magnets, the same being substantially as and for the purpose hereinbefore explained.

Also, the combination as well as the arrangement of the two magnet cases, the bearing carrier, and the divisional ring, or the same and the annular float.

No. 53,876.—FRANK J. ROBINSON, Laconia, N. H.—*Churn.*—April 10, 1866.—The air is inducted through a central opening in the lid, passes down the vertical tubular dashers, is disseminated in the track of the radial dashers and has egress at holes in the lid.

Claim.—The construction of the dasher with inclined radial plates *h h*, and vertical tubes *g g*, substantially as and for the purpose herein specified.

Also, the combination of the central opening *p* for the ingress, and the tubes *n n* for the egress of air, in combination with the dasher, for the purpose set forth.

No. 53,877.—JONATHAN S. ROBINSON, Baltimore, Md.—*Provision Safe Table.*—April 10, 1866.—The space beneath the table is utilized as a safe.

Claim.—The combination of the safe A and table D, when constructed and operating as described.

No. 53,878.—L. M. ROBY, Leesville, Ohio.—*Horse Hay Fork.*—April 10, 1866.—The catch is made adjustable by attaching to it a short arm provided with a set screw; the rake head rotates upon its hinging joint in the bale hook, when the trigger is depressed to release the detent.

Claim.—First, the combination and arrangement of head bar A, constructed as described, with the tines B, secured as specified, and with bale posts C, bale D, trigger post E, and adjustable trigger K, substantially as and for the purposes set forth.

Second, the trigger K, constructed as described, in combination with arm *b*, screw *i*, spring *x*, and tooth *s*, substantially as and for the purposes set forth.

No. 53,879.—T. H. RODGERS, Chicago, Ill.—*Brick Machine.*—April 10, 1866.—The plunger reciprocates vertically in the case; it is operated by a rock shaft, pitman, and a toggle, which elevates the clay into the mould. The sliding cover maintains its position till the brick is pressed and ready to be discharged by the lever which lifts the follower.

Claim.—First, the main frame A, provided with the moulds, in combination with the plunger D, and levers F and G, arranged and operating as and for the purpose set forth.

Second, in combination with the above described parts, the shaft H, provided with the lever J and connecting rod I, for operating the press, as described.

Third, in combination with the press, constructed as described, the lever *b* for elevating the plunger D and removing the brick, as shown and described.

No. 53,880.—FRANCIS M. ROGERS, Cincinnati, Ohio.—*Fireplace.*—April 10, 1866.—A reverberating chamber between the back and crown plate is open at bottom and closed at top by a damper, whose position determines the direction of circulation. Flues behind the corrugated fire back discharge the ashes.

Claim.—First, in the described combination, the back G, crown plate I, and damper K, forming a smoke-consuming and reverberating chamber J, throat and direct exit, substantially as set forth.

Second, the series of ash flues *l*, arranged as described, in combination with the direct exit flue, for the purposes set forth.

No. 53,881.—SYLVESTER H. ROPER, Roxbury, Mass.—*Revolving Fire-arm.*—April 10, 1866.—The revolving cylinder is open at the sides and enclosed in a sleeve. As a cartridge is brought in line with the barrel, a plunger, attached to the hammer by a link, presses it into the stationary chamber in the rear of the barrel and instantly discharges it. The recoil of the plunger, which fills the double office of breech pin and hammer rod, is prevented by the conformation of its rear end and the head of the hammer to which it is attached.

Claim.—First, the combination of revolving carrier, the piston, the hammer, and the connecting link G′, arranged and operating substantially as described.

Second, the inclined plane *v* on the end of the piston, in combination with the inclined plane *u*, on the head of the hammer to lock the hammer, as described, whether used in combination with a revolving carrier or a stationary cartridge bed.

Third, the double-acting spring H, constructed and arranged as described, in combination with the ratchet wheel E, and the eccentric slot *s*, as and for the purpose described.

Fourth, in combination with the double-acting spring H, the ratchet wheel E, and the eccentric slot *s*, the thumb screw *l*, as and for the purpose described.

Fifth, connecting each end of the main spring to the hammer by a separate stirrup, arranged and operating as described.

Sixth, in combination with the cylindrical case B, and its cover *d*, the yielding spring *e*, as and for the purpose described.

No. 53,882.—CHRISTIAN ROSENBERRY and WARREN TANNER, Chicago, Ill.—*Vegetable Slicer.*—April 10, 1866.—An ordinary table knife is placed obliquely in the slots of the side plates, and is adjustable as to depth of cut.

Claim.—The slicer herein described, composed of the bed A *a*, with the double side pieces B^1 B^2 C^1 C^2, and adjustable holes E F, adapted to receive knives of different sizes and hold them at various heights, substantially as and for the purpose herein set forth.

No. 53,883.—GEORGE ROSS, Newport, Ky.—*Moulding and Casting Apparatus.*—April 10, 1866; antedated October 18, 1865.—The receiving and moulding pits, the drying oven, and the casting pit are arranged consecutively in two arcs, at whose centres are pivoted cranes for moving the flasks and the ladle of molten metal.

Claim.—First, the vertical pipe mould drying oven, herein described, arranged with separate and distinct communications with the moulding and casting pits, as and for the purpose specified.

Second, the described, or equivalent, consecutive arrangement of receiving pit A, moulding pit B, oven C, and casting pit D.

Third, the combination of the two cranes F and G with the moulding pit B, oven C, and casting pit D, arranged substantially as specified.

Fourth, the skids H H′, arranged in the described combination with cranes F and G, and continuous pit A B C D.

No. 53,884.—JOHN RUSSELL, Sing Sing, N. Y.—*Holder for Chisels.*—April 10, 1866.—The chisel is clamped between two resilient disks, which allow the edge to accommodate itself to the surface of the file blank.

Claim.—Clamping the chisel between two disks of India-rubber or gutta percha, by means of the set screw D, or its equivalent, substantially as and for the purposes set forth.

No. 53,885.—VAN BUREN RYERSON, New York, N. Y.—*Apparatus for Separating the Precious Metals from other Substances.*—April 10, 1866.—The pan has transverse grooves

on its bottom, is slightly inclined, and is reciprocated longitudinally by the engagement of the connecting rod of its carriage with cam grooves in the driving wheel.

Claim.—The pan with the bottom formed with recesses, substantially of the form herein described, in combination with the means, or the equivalent thereof, for giving reciprocating motions, substantially such as described.

No. 53,886.—RUFUS S. SANBORN and WILLIAM BENNETT, Ripon, Wis.—*Stove Pipe Damper.*—April 10, 1866.—A hollow conical frustum is centially secured in a disk, and the draught is regulated by its direction of presentation.

Claim.—The metallic plate A, with the funnel-shaped tube B, when arranged in the manner substantially as and for the purposes herein specified.

No. 53,887.—GEORGE W. SAYRE, Pisgah, Ohio.—*Manufacture of Molasses.*—April 10, 1866; antedated March 25, 1866.—The steam-jacketed evaporator has a dome connecting an apparatus to condense the rising vapor.

Claim.—The arrangement, construction, and combination of the steam boiler D, sirup pan E, and dome F, with condensing pipes H J and K and water tank P, as herein described, and for the purposes set forth.

No. 53,888.—FREDERICK SCHIMMING, Philadelphia, Penn.—*Bed Bottom.*—April 10, 1866.—The rows of coiled springs at head and foot are connected to transverse bars, to which the sacking is attached by spiral springs.

Claim.—The sacking or bed bottom, the straps *l l*, and the springs *e e*, arranged substantially as herein specified and described.

No. 53,889.—PH. LOUIS SCHMANDT, Hoboken, N. J.—*Watchman's Register.*—April 10, 1866.—The hour hand has a point projecting at right angles; it punctures a register paper on a hinged frame, when the latter is drawn up against it by the patrol; the series of punctuations indicate the frequency and intervals of his visits.

Claim.—First, the use and employment of the point N, or an equivalent moving part of a clock in combination with the lid or dial cover C, where a mark of the time by a motion of the lid C is produced on said lid.

Second, the employment and combination of the lid C with the paper dial I, the springs D D, the cord X, operating with the hour hand and point N, substantially as and for the purpose set forth.

No. 53,890.—KARL SCHOU, Lafayette, Ind.—*Lamp Snuffer.*—April 10, 1866.—An angular blade on one side of the wick tube and a movable plate on the other side are closed together above the tube, trimming the wick.

Claim.—An improved lamp snuffer, constructed and operated substantially as herein described, in combination with a lampwick tube, for the purpose set forth.

No. 53,891.—S. F. SEELY, Sylvania, Ohio.—*Plough.*—April 10, 1866 —The beam has a semicircular rear, and a landside continuate therewith; the coulter has a corresponding shape; the subsoil share follows at a lower level, and is attached by a curved standard to the beam.

Claim.—First, the curved or semicircular rear part of the beam A, and front part of the plough or landside B, substantially as shown, to operate upon weeds, trash, &c., and prevent the same from choking or clogging up the plough, as set forth.

Second, the semicircular coulter D, in combination with the semicircular rear end of the beam, substantially as and for the purpose specified.

Third, the subsoil plough E, having a curved standard F, pivoted to curved bars G H, the front ends of which are pivoted to the landside at elevated points, to operate in the manner substantially as and for the purpose herein set forth.

No. 53,892.—PELEG A. SHERMAN and FREEMAN BAXTER, Pawtucket, R. I.—*Means for Operating the Picker-staff of Looms.*—April 10, 1866 —The picker-staff is actuated by a lever on the lay frame, which is reciprocated by an oblique guide bar on the frame. The picker-staff reciprocates the hook which carries through the shed the weft, which is fed from one side only, passing across the warp, and returning again at each beat of the lay.

Claim.—First, the inclined slotted guide J, as set forth, for communicating the desired motion to the hook E, or whatever instrument or device is used to convey the weft through the warp.

Second, the guide J and the lever A, connected to the brace F by the stud B, in combination with the rod C and picker-staff D, as and for the purpose set forth.

No. 53,893.—SAMUEL S. SHERMAN and JEREMIAH G. SHERMAN, McHenry, Ill.—*Broom Head.*—April 10, 1866.—The broom head has openings through which wedges are driven to clamp the corn; internal bars and points assist.

Claim.—First, fastening the broom corn or other material into the broom head, by forcing keys or wedges through slots in said head, substantially as herein shown.

Second, the slots *a b*, the keys *p*, the cross-bars *b*, and ledges *c*, when arranged and operating substantially as herein shown and described.

No. 53,894.—NATHANIEL L. SIBLEY, Weston, and BENJAMIN SHIVERICK, Waltham, Mass.—*Doors for Puddling and other Furnaces.*—April 10, 1866.—Explained by the claim.

Claim.—In combination with an iron door, a lining of calcined plaster, gypsum, or other material which conducts heat slowly, made either solid or with an opening or air space, as may be preferred.

Also, a nose piece or guard around the hole in the door, made separate from the door and fastened to it.

Also, making the lining of the door to cover and protect, or partially cover and protect, the nose piece or flange around the hole in the door, substantially as described.

Also, in furnace doors, a lining made of plumbago or crucible material, to protect the door and intermediate lining from intense heat.

Also, the combination and arrangement of the iron plate A, lining J, and lining K, substantially as described.

Also, making the lining of furnace doors in one piece of white clay fire-brick crucible material.

Also, fastening the lining to the iron plate by the bars of metal L L, substantially as described.

Also, the holes in the door, in combination with the lining for the purpose specified, substantially as described.

No. 53,895.—THOMAS SIMMONS, Chicago, Ill.—*Rectifying Apparatus.*—April 10, 1866.—A pipe connects the reservoir with the lower chamber; the condensation of steam in the latter draws down the liquid contents of the reservoir above; the connecting pipe, steam induction, air eduction, and the discharge pipes have stop cocks.

Claim.—First, the combination and arrangement of the reservoir A, the receiver B, the connecting pipe C, provided with the stop cock D, or its equivalent, and the steam pipe L, arranged and operating as and for the purposes specified.

Second, the combination and arrangement of the reservoir A, the perforated chamber P, the receiver B, connecting pipe C, and steam pipe L, operating as and for the purposes set forth.

No. 53,896.—ROBERT STEWART, Elmira, N. Y.—*Annular Auger.*—April 10, 1866.—These concentric hollow augers are supported and revolved by motion applied to their rear ends, and revolve in diverse directions; the spiral discharge flanges on the barrel of the auger are broken at intervals to break up the chips.

Claim.—First, making the thread of a hollow auger with openings *c*, substantially as and for the purposes set forth.

Second, revolving each outer hollow auger in a reverse direction from its next inner hollow auger, substantially as and for the purposes set forth.

Third, arranging a series of hollow augers, so that the rear end of each auger shall project sufficiently beyond the next larger auger to turn as its own shaft in independent journal boxes, substantially as and for the purposes set forth.

No. 53,897.—DANIEL STONER, Chicago, Ill.—*Button-hole for Paper Collars.*—April 10, 1866.—The button is passed through the larger opening, and the collet or thread passed through the neck to the smaller, securing the button from direct withdrawal.

Claim.—The combination in a button-hole for card-board paper collars and cuffs, or collars and cuffs of any similar material, of the enlargements A and B, proportioned as specified, and the peculiarly constructed slit connecting the same, all arranged and operating substantially as specified and shown.

No. 53,898.—EDMUND F. SUTTON, New York, N. Y.—*Lamp Cleaner.*—April 10, 1866.—A self-adjusting elastic wiping finger is attached to a fixed wiping shaft.

Claim.—The elastic self-adjusting wiping finger on one side of the stick or shaft, in combination with the fixed wiper on the opposite side of the stick or shaft, the two operating together, substantially as herein specified.

No. 53,899.—ENOCH K. THOMAS, Rock Island, Ill., and HANS H. ANDRESEN, Davenport, Iowa.—*Plane for making Blind Slats.*—April 10, 1866.—The face of the plane stock is made in steps, so that several splints can be cut at once. The splint raised by the edge of the knife passes through a throat in the latter to the rear.

Claim.—The construction of a cutter for producing slats with two cutting edges, and an opening through the shank of the cutter for the passage of the slats, substantially as described.

Also, the combination of one or more slat cutters, constructed substantially as described, with a plane stock, having its sole stepped, substantially as set forth.

No. 53,900.—T. P. THORPE, New York, N. Y.—*Exercising Machine.*—April 10, 1866.—The frame of the machine is formed of twisted and bent wire. The balance weight adjusts the height of the seat from the floor.

Claim.—First, making use of wire, or its equivalent, for the seat E, the rods N N, the springs C C, the base or foundation A A A, and the feet B B B B, as herein formed or combined and described, and for the purpose herein mentioned.

Second, the toy horse or balance weight marked P, and sliding on rods N N, as described, for the purposes herein mentioned.

No. 53,901.—A. TIENSCH, Memphis, Tenn.—*Cotton-picking Machine.*—April 10, 1866.—The machine passes over the plants, which yield their cotton to the revolving brushes, which are cleared by combs. The cotton is removed from the combs and garnered in a chamber by the action of teeth revolving in a segment of a circle, and retracted to release the cotton.

Claim.—First, the employment of rotary brushes, or their equivalent, substantially as described, for the purpose of gathering cotton from the plants.

Second, mounting a series of movable brushes upon a carriage, in such manner that upon moving the carriage over rows of cotton plants, said brushes will draw the cotton from the pods and deliver it in the machine, substantially as described.

Third, the combination of movable and stationary combs *k l*, or their equivalents, with rotary brushes, which are adapted for gathering cotton from the pods, substantially as described.

Fourth, providing the movable combs *l* with clearers *p*, or their equivalents, substantially as described.

Fifth, the combination of a slotted or open guard plate E, with a series of brushes adapted for picking cotton from the pods, substantially as described.

Sixth, the hinged doors D D′, forming the upper and lower sides of a cotton receiver, in combination with the devices for gathering cotton from the pods, substantially as described.

Seventh, locating the driver's seat P, in such relation to the cotton receptacle that the driver can see when this receptacle is filled, and also manage the horse drawing the machine.

Eighth, constructing the sides A A of the carriage body so as to form side guards on each side of the gathering part of the machine, substantially as described.

Ninth, providing for adjusting the brushes and securing them at any desired height, according to the height of the cotton plants, substantially as described.

Tenth, the hinged brace M, and tongue I, applied to the carriage of a cotton picker or gatherer, substantially as described.

Eleventh, the combination of an adjustible seat P, with contrivances which will admit of the adjustment of the front part of the machine, substantially as described.

No. 53,902.—THOMAS TRIPP, Chicago, Ill.—*Propeller Wheel.*—April 10, 1866.—The curvature and conformation of this double spiral is seen in the illustration.

Claim.—Constructing the blades of a propeller screw with two reversed curves which shall be arcs of the two circles last above described, as and for the purposes specified and shown.

No. 53,903.—GEORGE O. TUPPER, New York, N. Y.—*Furnace Grate Bar.*—April 10, 1866.—The lower flange of the bar is corrugated longitudinally.

Claim.—The furnace grate bars, the rib or lower part of which is corrugated longitudinally, with one or more corrugations on each side, substantially as herein described, and for the purposes set forth.

No. 53,904.—OTIS TUFTS, Boston, Mass.—*Steam Hoisting Apparatus.*—April 10, 1866.—A movable valve seat is placed within the steam chest, and its changes are made by rack and pinion, and operative connection. A closed vessel of liquid has a perforated valve and piston, through which the liquid passes when in motion; the closure of these orifices stops the motion, and holds the hoisting device steadfast.

Claim.—The transversely movable valve seats *k*, in combination with the pulley shaft *o*, and rack and pinion *m m*, or equivalent, for the purpose of stopping, starting, regulating the speed, and reversing the direction of motion in steam-hoisting apparatus, substantially as represented.

Also, in combination with a hoisting apparatus, and more particularly with the starting and stopping cord or rod thereof, of a closed vessel filled with liquid, and provided with a piston, when such cord or rod is so arranged, as by movement imparted thereunto, to open or close apertures which will, by allowing the liquid to pass the piston, permit motion of the hoisting apparatus, or by preventing the liquid from passing, the piston will stop the hoisting apparatus, and hold it from moving, substantially as described.

Also, the combination with the stopping and starting cord or rod of a hoisting apparatus, of the valves of a liquid stop apparatus, and the steam valve or movable seat of the steam engine motor, operating substantially as described.

No. 53,905.—P. H. VANDER WEYDE, Philadelphia, Penn.—*Percolator.*—April 10, 1866.—The cylinder is counter-weighted, and supports, by internally projecting springs, the series of perforated boxes.

Claim.—First, the method herein described, of making extracts, and for filtering purposes, which consists in dividing the column or vessel to contain the material to be extracted or filtered, into a series of horizontal layers or divisions, which, by suitable mechanical means may be moved upward, so as to allow the addition of fresh materials to the bottoms, and its removal to the top when exhausted, substantially as described.

Second, the manufacture of artificial bone-black from wood charcoal, and its use for filtering purposes, either alone or mixed with compounds of lime or magnesia.

No. 53,906.—HENRY VAN DEWATER, Buffalo, N. Y.—*Water Wheel.*—April 10, 1866.—The upper flange of the "Jouval turbine" wheel directs the water downward to the cycloidal buckets, which discharge it through a throat. The barrel of the wheel has a horizontal diaphragm, and the lower portion connects by orifices with the bucket-space, to relieve the pressure on the step.

Claim.—First, the cycloidal buckets *c*, applied to the wheel, in connection with the inclined flange *b* at the top of the wheel, and the band B at the outer edge of the lower part of the buckets, provided with an inner inclined or bevelled surface, substantially as set forth.

Second, constructing the cylinder A of the wheel with a horizontal partition *a*, in connection with openings *b* made in said cylinder below the partition, and the chamber D in which the wheel shaft C is stepped, substantially as and for the purpose specified.

No. 53,907.—ISAAC H. WAIT, Otisco, Mich.—*Sash Supporter and Fastener.*—April 10, 1866.—The hook on the counter-weighted lever engages with a projection on the sash, to prevent its falling, and a pivoted upper claw may be engaged to prevent its being lifted.

Claim.—Combining with an overpoised lever B pivoted to the window frame, and having a permanent hook or jaw *c* upon it, a second pivoted hook or jaw *i*, and so made as that one or both of said hooks may act in connection with a holder or holders *f f* on the sash, substantially in the manner and for the purpose herein described and represented.

No. 53,908.—WILLIAM WAKENSHAW and THEODORE R. DUNHAM, Newark, N. J.—*Trunk Hinge.*—April 10, 1866.—The members of the hinge are made in angle form, so as to embrace the corners of the trunk and lid respectively.

Claim.—A hinge for trunks, chests, and other articles, provided with lids having cleats or "valances" attached, constructed in angle form, so as to extend or lap over the ends or sides of the trunk or other article, and the end or side "valances" of the lid, substantially as herein shown and described.

No. 53,909.—Z. D. WATERS, Brookville, Md.—*Seeding Machine.*—April 10, 1866.—Explained by the claim.

Claim.—First, the arrangement of one or more seed cups within a hopper box F, in such manner that said cup or cups shall elevate the seed above the bottom of the hopper, and discharge the seed into a funnel *g*, which conducts it out of the hopper, substantially as described.

Second, conducting the seed and fertilizer from two funnel hoppers *g g'*, into an inverted funnel-shaped guard G, substantially as described.

Third, the construction of the seed or fertilizer hopper of a cylindrical chamber *b*, communicating with an upper receiver, through slotted openings *d*, substantially as described.

Fourth, the combination of the elevated receiving hopper *g* with the cylindrical vessel *b*, and one or more revolving seed elevators, substantially as described.

Fifth, the conical hooped scatterer I, arranged beneath the discharging apertures of the hoppers *g g'*, and surrounded by a conical skirt or guard G, substantially as described.

Sixth, extending the upper ends of the receiving hoppers *g g'* above the plane of the apertures *a a* leading into the cylindrical chambers *b b*, substantially as and for the purposes described.

Seventh, providing for discharging seed or fertilizing substances, or both, from a hopper by means of revolving elevators or cups, which are entirely enclosed within said hopper, substantially in the manner described.

Eighth, attaching the coverers *m m* to a forked standard, which is constructed substantially as described.

No. 53,910.—JOSEPH WATROUS, Jr., Mystic River, Conn.—*Cotton Gin.*—April 10, 1866.—The frame is provided with removable side casing and deflecting boards.

Claim.—In combination with the side frames the removable side casings and deflecting boards, arranged as described.

No. 53,911.—EDWARD P. WHEELER, Nebraska City, Neb. Ter.—*Cultivator.*—April 10, 1866.—The devices refer to the lateral and vertical adjustment of the ploughs and the drivers' seat.

Claim.—First, the arrangement of the levers F, pivoted standards L, and plough beams D, as described.

Second, pivoting the levers F and standards L to the plough beams, by means of the longitudinally arranged pins or rods *p*, as and for the purposes shown and set forth.

Third, providing said levers, when arranged with the standards L, as set forth, with the knee rests *l*, as and for the purposes specified.

Fourth, the combination of the hinged beams D, standards L, levers F, and hook *d*, arranged as described and shown.

Fifth, in combination with the beams D and standards L, the arrangement of the adjustable standard P and cross-bars Q R, as described.

Sixth, the combination of the cross-marking bar T, provided with shovels V, with the drags J, for the purposes set forth.

Seventh. the combination and arrangement of the standards L P, the levers F, beams D, cross-bar H, and brace I, when arranged so as to render said standards L rigid, for the purpose of ploughing in grain, as shown and specified.

No. 53,912.—EDWARD P. WHITCOMB, Coldwater, Mich.—*Churn.*—April 10, 1866.—The lower dasher and the upper and surrounding dasher revolve in different directions by the impulse of the bevel wheel, which rotates the pinions on the central and sleeve shafts respectively. The milk is tempered by water in the jacket.

Claim.—The combination of the frame which supports the gearing, the reverse motion, diamond-shaped right angle blades, or beaters, as described, with the space or water chamber which surrounds the churn, substantially as herein set forth.

No. 53,913.—H. C. WILKINS, Albany, N. Y.—*Manufacture of Candy.*—April 10, 1866.—Popped corn, sweetened with molasses candy, is pressed and cut into blocks.

Claim.—The composition of matter above described, for the manufacture of candy, together with the process of making the same, substantially as set forth in the specification.

No. 53,914.—JACOB WOOLF, Burr Oak, Mich.—*Transmitting Power.*—April 10, 1866.—Weights are suspended from shafts which rotate in their bearings in the arms of a central shaft, and have a revolving motion round the centre, to which they are connected by bands which traverse pulleys on their respective shafts.

Claim.—The shaft B, the arms G G, with the shafts H H, and their weight boxes K K, arranged substantially as described, and operating either by pulleys E E and I I, and belts, or by toothed gearing, or by any device to accomplish the same end, so as to cause the weights K, or their equivalents, to be thrown out of balance in such a manner that one shall be constantly further from the axis of the shaft B than the other, and thereby aid it in its revolution, as and for the purpose set forth.

No. 53,915.—HENRY I. BEHRENS, New York, N. Y., assignor to himself, HENRY C. DART, and EDWARD DART, same place.—*Rotary Engine.*—April 10, 1866.—The segmental pistons are recessed upon their sides; are attached to parallel shafts which rotate in opposite directions, and act alternately as pistons, and as abutments for each other. Their inner surfaces rotate around stationary hubs concentric with their respective shafts.

Claim.—First, the concentric-fixed hubs, recessed substantially as described, in combination with the two-geared shafts, their attached pistons, and the cylinder, substantially as herein set forth.

Second, the pistons attached to the facing sides of the two disks, secured to their respective shafts, and so arranged that the piston or pistons of one shaft work against the face of the disk of the other shaft, substantially as herein described.

No. 53,916.—JOHN E. BROWN, Lansingburgh, N. Y., assignor to himself, CHARLES A. MOTT, and A. A. PEEBLES, of same place.—*Hame for Horse Collars.*—April 10, 1866.—The loop in which the upper hame strap is inserted slides upon the hame for vertical adjustment; the spring holds the pins in engagement with a plate on the hame. The rectangular tug loop, secured by staples to the hame, has notches for the adjustment of the eye of the trace.

Claim.—First, the adjustable collar B, arranged with the spring *d* and the pins *f*, in combination with the holes *b* in the plate *a*, at the outer edge of the hame, substantially as and for the purpose set forth.

Second, the loop E, bent in right angular form, notched at its rear or outer end, and secured to the hame by the eyes *g*, to admit of the eye *j* of the trace strap being adjusted higher or lower in the loop, and retained as adjusted by the pole straps, substantially as shown and described.

No. 53,917.—J. B. GRIDLEY, Louisville, Ky.—*Baling Press.*—April 10, 1866; antedated October 10, 1865.—Explained by the claim.

Claim.—First, in a baling press the levers G G, having their inner ends applied to or near the centre of the follower in combination with hangers, rods, or bars I I, which afford the fulcra for said levers, and a rope, chain, or other draught device, whereby the loose ends of the levers are made to approach each other, substantially as and for the purposes herein specified.

Second, in combination with levers which are made to act upon the follower by having their loose ends moved toward each other and which have their fulcra upon hangers, rods, or bars, a rope, chain, or any other device which shall impart motion to the follower before the levers attain their effective acting position, substantially as and for the object set forth.

Third, the means, substantially as herein described, for adapting the levers in assuming the position from which they act, to stand at the definite angle with the hangers or rods I, from which they may be most speedily made to take the position in which to act effectively upon the follower, said means consisting either of the widening of the levers at the points where the hangers or rods are attached, or in the application of the metallic blocks H, or their equivalents.

Fourth, the combination with the levers G G, hangers I I, and rope K, of the follower C D, ribs d', and guide slots a, the latter being adapted to prevent the tilting or canting of the follower in its movements through the press-box, as explained.

Fifth, the particular manner of constructing the joint which connects the levers with the follower, to wit: by means of the three parts E F F, connected by a single pintle c, as herein described.

Sixth, the metal blocks H H, attached to the levers G G, and provided with hooks $f f$, and guides d^2, to which hooks $f f$ the rods I I are connected, substantially as and for the purpose herein set forth.

No. 53,918.—Lewis Gibbs, Canton, Ohio, assignor to Bucher, Gibbs & Co., same place.—*Metallic Fastening for Plough Beams.*—April 10, 1866.—A metallic socket receiving the end of the beam and bolted to the handle.

Claim.—A metallic fastening for uniting a plough beam and handle, made with lugs, flanges, and recesses, and united thereto in the manner and for the purpose herein described and represented.

No. 53,919.—Aaron Gilmore, Buffalo, N. Y., assignor to himself, B. H. Austin, Jr., and Dolphus S. Austin, same place.—*Coffer Dam.*—April 10, 1866.—The space between the hollow walls of the coffer dam is occupied by air or water to float or sink it respectively. The false bottom may form a base for a pier, being detached when the coffer dam rises. One end may be removed to withdraw the coffer dam from the pier.

Claim.—A coffer dam A, (with or without a movable end-piece, A^2,) for the purpose and substantially as described.

No. 53,920.—Wm. H. Halsey, Hoboken, N. J., assignor to David N. Ropes, Orange, N. J.—*Manufacture of India-rubber Hat and Cap Bands.*—April 10, 1866.—The figured surfaces of the rollers adapt them to ornament strips of vulcanized rubber or gutta-percha.

Claim.—The combination of the two rollers with their surfaces prepared as described, one roll having a sunken or depressed and the other an elevated surface, substantially as and operating as and for the purposes set forth.

No. 53,921.—Wm. H. Halsey, Hoboken, N. J., and Maurice Fitzgibbons, New York, N. Y., assignors to David N. Ropes, Orange, N. J.—*New Article of Manufacture from Hard Rubber, &c., to be used in Articles of Dress.*—Explained by the claim.

Claim.—As a new article of manufacture, hard rubber or gutta percha, or similar material, ornamented by being subjected to two or more successive pressures or impressions of figured rolls, substantially as above described.

No. 53,922.—William H. Halsey, Hoboken, N. J., and Maurice Fitzgibbons, New York, N. Y., assignors to David N. Ropes, Orange, N. J.—*Method of Treating Hard Rubber or Gutta-percha for Articles of Dress, and other uses.*—April 10, 1866.—The material in thin sheets is vulcanized and then passed between figured rollers to produce the appearance of woven fabrics.

Claim.—The process herein, substantially as described, which consists of subjecting hard rubber, gutta-percha, or other similar material, to two or more successive pressures of figured rolls, substantially as and for the purposes above described.

No. 53,923.—Daniel K. Herr, Locust Valley, Penn., assignor to Theodore W. Herr, Lancaster, Penn.—*Stencil Brush.*—April 10, 1866.—The bristles are protruded from their enveloping case as required.

Claim.—First, the combination of the brush tube G and the external casing B, constructed and operating substantially in the manner and for the purpose specified.

Second, the brush J I, when expressly made or adapted to the brush tube G, and to be used in combination with the external casing B, in the manner and for the purpose set forth.

No. 53,924.—C. D. Hunt, Fairhaven, Mass., assignor to The American Nail Machine Company, Boston, Mass.—*Nail Plate Feeder.*—April 10, 1866.—A cam on the driving shaft oscillates the slide to give the obliquity of presentation of the plate for the taper of the nail. Another cam vibrates a lever, whose spring dogs feed the rack bar.

Claim.—The combination and arrangement of the double rack bar K, the pawls I I, the lever G, the spring M, and the cam H, as applied to the vibratory arm A and the shaft E, substantially as specified.

No. 53,925.—SUMNER MARVIN, South Royalston, Mass., assignor to himself and ALFRED W. BOYNTON, same place.—*Stove-pipe Damper.*—April 10, 1866.—The conical frustum inside the pipe has perforated sides, and at its ends dampers connected by a rod.

Claim.—The damper apparatus, composed not only of the frustum A having the openings *b b*, but of the two dampers C D, and their connecting rod E, made and arranged together, and with a flue or pipe C, substantially as specified.

No. 53,926.—ANDREW A. REED, North Bridgewater, Mass., assignor to ELMER TOWNSEND, Boston, Mass.—*Eyeletting Machine.*—April 10, 1866.—The punch and the eyelet carrier rise alternately, passing through holes in a table, and each meeting its counterpart. The eyelet hopper has a reciprocating motion which brings its periphery into position to expose an eyelet to the rising carrier.

Claim.—The combination of the stationary work-supporting surface, the punch, and the setting mechanism, when the latter is arranged to feed the eyelet laterally to or under the hole punched for its insertion, substantially as described.

Also, the construction by which the eyelet is removed by the feed pin, directly from the magazine, without the intervention of a chute or roadway, substantially as described.

Also, the combination of a stationary eyelet magazine, with a rotating ring, provided with pockets, into which the eyelets are thrust, substantially as described, and from which they are removed by the feeding instrument, substantially as set forth.

No. 53,927.—FREDERICK S. SANFORD and DWIGHT WHEELER, Bridgewater, Conn., assignors to GLOVER SANFORD & SONS and DWIGHT WHEELER, same place.—*Sewing Machine for Sewing the Sweat Linings to Hats.*—April 10, 1866.—The work plate is concave upon its top and also upon its side. The lining passes through a guide attached to the presser, while the angle of the hat is held down by an angular spring presser.

Claim.—The work plate D, guides E and F, constructed and arranged substantially in the manner described, in combination with a stitching apparatus, for the purpose specified.

No. 53,928.—E. H. SHEFFIELD, Stonington, Conn., and E. P. PALMER, New York, N. Y., assignors to E. H. WESTON, New York, N. Y.—*Device for Detaching Boats from Davits.*—April 10, 1866.—The davit falls are secured to hooks in the bow and stern respectively. The shanks of the hooks are secured by chains to a casting-off device amidships. When released, the shanks rise in their sockets, allow the pivoted hooks to rotate, and the boat is disengaged.

Claim.—The jointed hooks C fitting into sockets *d*, on the ends of a boat A, in combination with the retaining chains *f*, and with suitable mechanism for tightening or releasing said chains, constructed and operating substantially as and for the purposes described.

No. 53,929.—THOMAS TAYLOR, Baltimore, Md., assignor to SAMUEL C. RIDGEWAY and JOHN FOX, same place.—*Harvester Rake.*—April 10, 1866.—The rake is pivoted on a vertical axis, which rotates around a central shaft. The vertical movement is imparted by the reciprocating movement of the rear curved extension of the handle, through a swivelled post in the rear.

Claim.—The combined action of the crank shaft and curved arm of the raker, moving in the swivelled guide for giving motion to and operating the raker, as herein recited.

No. 53,930.—CASSIUS M. WERNER, Rockford, Ill., assignor to himself and EDWIN A. BIGELOW, same place.—*Improved Horseshoe.*—April 10, 1866.—The flange bars which carry the looped clasps are fastened into recesses in the body of the shoe.

Claim.—First, forming the clasps with open loops, as and for the purpose described.

Second, casting the clasps in one piece with the flange bar, as described, for the purpose set forth.

Third, the combination of the sole, the ribs, the flange bars, and the clasps, substantially as described

No. 53,931.—JAMES W. WESTON and FREDERICK BUCKNER, New York, N. Y., and REINHOLD BOEKLEN, Brooklyn, N. Y., assignors to JAMES W. WESTON, New York, N. Y.—*Artificial Leg.*—April 10, 1866.—The socket is adjusted to the size and shape of the stump by collapsible curved lapping plates, adjustable by wedges and conical filling pieces. The posterior lower end of the thigh piece and the patella are united by an elastic cord above the articulation of the knee to give the forward motion of the lower leg, which is checked by contact with a resilient pad. The ankle articulation consists of an interposed elastic ring and a central bolt.

Claim.—First, an ankle joint, formed by a spring of rubber or other suitable material, provided with recesses in its top and bottom surfaces, in combination with corresponding projections on the foot and limb, substantially as specified, so that the foot is allowed a limited motion in any direction, but is brought properly back to its place by said spring, as set forth.

Second, forming the ankle joint spring in the manner specified, with the front portion thereof more rigid than the back portion, in order that the foot may conform to the surface stepped upon, as set forth.

Third, a connecting bolt, with rounded heads or nuts, in combination with the elastic ankle joint, substantially as and for the purposes specified, and in combination therewith the sheet-steel socket for the heads, as set forth.

Fourth, the elastic stop block or blocks applied as shown, to arrest the forward movement of the lower limb, as specified.

Fifth, the hooks I I, formed of a bent piece of metal passing around the limb at the joint to strengthen the same, in combination with an elastic contractile band or spring applied between said hooks to throw the lower limb forward, as specified.

Sixth, adjusting the limb to the conical shape of the stump by the lining of veneer or other suitable material, rolled up with the edges lapping and attached at the upper end to the artificial limb, in combination with the curved adjustable wedge, or its equivalent, as and for the purposes specified.

Seventh, the conical filling pieces introduced into the artificial limb, as specified, to adjust the limb to the stump, as set forth.

No. 53,932.—ACHILLE ANGELINI, Genoa, Italy.—*Saddle and Harness.*—April 10, 1866.—The corrugated, cannular, fistulose, or foraminous leather or vulcanized rubber, affords an elastic lining.

Claim.—First, in the manufacture of cushions or pads for riding saddles, pack saddles, and harness of all kinds, of elastic substances, such as vulcanized gutta percha or caoutchouc, when of the form and shape substantially set forth.

Second, the formation of said elastic substances into tubes, double tubes, dice, knobs, or spheres, substantially as and for the purpose herein set forth.

No. 53,933.—WILLIAM HALE, London, England.—*Rocket.*—April 10, 1866.—The central aperture is dispensed with, and the whole volume of gas evolved issues at three apertures in a direction at right angles to the axis of the projectile.

Claim.—The application of the principle by which the expansion of the whole volume of the gas as it issues from the vent is made to subserve the purpose of producing rotation in the rocket about its longitudinal axis, substantially as described.

No. 53,934.—MORRIS WEST RUTHVEN, Middlesex, England.—*Steering Apparatus.*—April 10, 1866; patented in England November 10, 1864.—The pressure of the water in restoring the rudder to its median position raises a weight, which becomes an auxiliary in its subsequent deflection.

Claim.—In combination with a tiller, operated by gears, pivoted levers, and links, substantially as herein described, a weight or spring, which reserves or stores the power with which the water forces the rudder in one direction, and is applied to aid the helmsman in putting the rudder over in an opposite direction, substantially as set forth.

No. 53,935.—JAMES HODGES, Penny Hill, Bagshot, Eng.—*Peat Machine.*—April 10, 1866.—The peat is cut by a screw excavator, raised and conveyed to the hopper and pulping trough, in which rotates a shaft with radial knives; passing from thence it is reground in a second trough and delivered on to a peat bed, where it is rolled and drained.

Claim.—First, the pulping trough and separator E F, provided respectively with the spider diaphragms I and fixed bars K, and also provided with the shaft G, having upon it the vanes J and bars L, all arranged to operate in the manner substantially as and for the purpose set forth.

Second, the pulping and distributing trough N, provided with diaphragms c, having a varying number of arms, and also provided with valves, apertures, or slides Q at its bottom, and with a shaft O, having vanes P upon it, arranged to operate substantially in the manner as and for the purpose specified.

Third, the combination of the screw excavators, elevator, and pulping mechanism applied to a vessel, and arranged for joint operation, substantially as and for the purpose set forth.

Fourth, the preparing of the peat beds with subsoil drains, substantially as described, when used in connection with a vessel provided with an excavator and pulping apparatus, substantially as set forth.

No. 53,936.—MORRIS WEST RUTHVEN, Middlesex, England.—*Rudder.*—April 10, 1866; patented in England July 11, 1863.—The jointed sections are so pivoted and connected by links that when deflected laterally they assume a curve.

Claim.—In combination with a rudder composed of a series of hinged sections, the connecting of said sections at their upper ends by means of a slotted crank or lever on one part that receives in its slot a pin or anti-friction roller on the next adjacent part, and so on throughout the series, to cause the parts when moved by the rudder to assume an approximate curve, substantially as described.

No. 53,937.—MORRIS WEST RUTHVEN, Middlesex, England.—*Sluice for Propelling Vessels.*—April 10, 1866; patented in England May 1, 1865.—The rotating sluice is placed at the point of divarication of the passages of a rotary pump to give direction to the discharge of the water in the propulsion of vessels.

Claim.—The employment in the propelling of vessels of rotating sluices such as are herein described, each in combination with two outlet passages, the sluice in each case being arranged to turn with its axis while the periphery and ends of the sluice are free as may be from contact with the inclosing surfaces of the chamber in which the sluice is contained, by which arrangement the sluice may be turned comparatively free from friction, and consequently requires but little power to turn it.

No. 53,938.—JOHN F. HARTMAN, Fond-du-Lac, Wis.—*Swing.*—April 10, 1866.—The oscillation of the pendulous frame is assisted by a rope and compound lever connected to an arm on the axis of suspension.

Claim.—The combination and arrangement of bar B, and swing bars D D, with the levers E F G and H, and rope I, substantially as and for the purposes set forth.

No. 53,939.—A. LEUCHTWEISS, Cincinnati, Ohio.—*Pump.*—April 10, 1866.—The water raised by the revolving spiral buckets is received over the sharp edge of an abutment into the eduction chamber.

Claim.—The sharp-edged abutment *c*, in combination with the discharge passage *a*, screw C, and cylinder A, constructed and operating substantially as and for the purpose described.

No. 53,940.—JAMES ARMSTRONG, Bucyrus, Ohio.—*Stone Dressing Machine.*—April 17, 1866.—The chisel holder reciprocates in guides, whose adjustment determines the angle of presentation of the chisels to the stone, an interposed spring relieves the pitman of the blow.

Claim.—First, interposing an elastic cushion between the chisel holder F, and the pitman rod or crank pin, in such manner that this cushion shall receive the concussion caused by the sudden striking of the chisel upon the stone, substantially as described.

Second, pivoting the lower end of the pitman rod L to the chisel holder F, by means of a swivel pin *t*, and a spring box J, substantially as described.

Third, the combination of the two guides *d* and E with the movable frame C, arranged substantially as described.

Fourth, providing for adjusting the guides *d d*, at their upper end, substantially in the manner and for the purposes described.

Fifth, applying two chisel guides to the movable frame C, in such manner that the chisel holder F can be operated in either guide by a single crank *g'*, substantially as described.

No. 53,941.—T. A. AUBERLIN, San Francisco, Cal.—*Lock.*—April 17, 1866.—The nut whose bit projects the bolt is operated by a flat key whose notches arrange the tumblers to disengage the bolt.

Claim.—The nut C, with the bit *b*, bearing against a shoulder of the bolt and with a narrow keyhole *d* in combination with the key K, and tumblers E, constructed and operating substantially as and for the purpose described.

No. 53,942.—JOHN BARNES, Rockford, Ill.—*Harvester Rake.*—April 17, 1866.—The cut grain is swept across the platform from the grain to the stubble side, compressed against a palm into a compact gavel, turned transversely to the path of the machine and dropped upon the ground. The rake is turned by means of an eccentric groove formed in a disk, secured to and rotating with a crank shaft mounted in a tubular swinging arm or crane. The disk is controlled by a pin or fixed stop on the rake standard working in the eccentric groove.

Claim.—First, turning an automatic rake by a cam groove or eccentric rotating on a crane post, or swinging arm, and controlled by a pin fixed on the frame, substantially in the manner described.

Second, the combination of a swinging jointed rake with a cam groove which turns or swings the rake, and with a crank which opens and closes the rake, substantially in the manner described.

Third, the combination of the tubular swinging arm with the crank shaft passing through it, substantially as described.

Fourth, the combination of a cam groove, a crank shaft, a swinging arm, a rake stale, and a compressing palm, substantially in the manner described.

No. 53,943.—C. F. BARTLING, Greenville, Ohio.—*Loom.*—April 17, 1866.—The tappets on the pattern cylinder lift the several heddle frames by direct action upon their projections. A link is pivoted on the lay and slides upon a pin secured on a fixed cross beam; a pawl communicates motion from the link to the cylinder. A friction strap on the warp beam serves to partially suspend it.

Claim.—First, the reversible, removable, and adjustable cylinder *i*, provided with tappets *m m m*, the recess *x*, and stops *t t t*, substantially as and for the purpose set forth and described.

Second, the heddle frames *d d d d*, when the same are provided with the staffs A A A, and projections B B B, and arranged and operated by the pattern cylinder *i*, as and for the purposes set forth.

Third, the link I and pawl V, in combination with the batten *b*.

Fourth, the lever *f*, strap *s*, and set screw *g*, arranged in combination with the cloth-beam *h*, in the manner set forth.

Fifth, the devices herein described for operating the heddles, by which the shed is opened by the forward motion of the batten.

No. 53,944.—HENRY C. BIGGS and ANDREW C. FLINN, Lancaster, Penn.—*Hydrant.*—April 17, 1866.—To obviate the necessity of digging, the pipes at the base are disconnected for repair by lever and wrench reaching from the surface to the coupling at the branch main.

Claim.—The construction and arrangement of the horizontal key H I J, in combination with the lever attachment P Q R S C, together with the vertical barrel F and its angled base K, in combination with the claw and rod T U, all arranged and operated in the manner and for the purpose specified.

No. 53,945.—EDMUND BROWN, Burlington, Vt.—*Lamp.*—April 17, 1866.—A supplementary tube is pivoted at the upper portion of the wick-tube, and is capable of vibration to remove the snuff or to assume parallelism with the upper edge of the wick.

Claim —Attaching a supplementary, or its equivalent, capable of being set at an angle and of being vibrated as described at the top of a wick-tube of a lamp, substantially as above set forth.

No. 53,946.—F. J. CARRALL, Millville, N. J.—*Medicine.*—April 17, 1866.—A decoction of the roots of spruce, pine, red cedar and hoarhound, combined with molasses, pine tar and flavoring material.

Claim.—A medicine for the cure of dyspepsia, consisting of the decoctions of the roots of spruce, pine and red cedar, in combination with the within described ingredients, or their equivalents, the whole being compounded substantially in the manner described.

No. 53,947.—JARVIS CASE, Springfield, Ohio.—*Cultivator.*—April 17, 1866.—The plough standards are suspended from the rock shaft, the middle standards connected by a chain, and the shields attached by angle pieces socketed to the standards.

Claim.—First, suspending the plough beams from the rock shaft F, mounted on the posts H, substantially as shown and described.

Second, the lock bar or brace *c*, arranged to operate in connection with the shaft F, as and for the purpose set forth.

Third, the standards I, connected by the chain L, and provided with the foot rests *s*, as shown and described.

Fourth, attaching the shields O by means of the bent arms *n* and staples *t*, as set forth.

No. 53,948.—FREDERICK CATLIN, New York, N. Y.—*Bottle Stopper.*—April 17, 1866.—The tubular plug has a hinged cover, is surrounded by cork, and rests by its shoulder on the lip of the bottle; it is chained to a label collar on the neck.

Claim.—The new bottle and top, made substantially as herein described.

No. 53,949.—CHARLES H. CLARK, Wilmington, Del.—*Piston-packing.*—April 17, 1866.—Two disks form the piston head, a packing-ring with oblique inner edges occupying a corresponding groove in the adjacent faces of the disks. The pressure of steam on either disk presses outward the packing-ring.

Claim.—The inclined bearing surfaces of the ring *a*, in combination with corresponding inclined surfaces of the head *b*, and follower *c*, substantially as and for the purpose described.

No. 53,950.—THOMAS R. COOK, West Newton, Ind.—*Ditching Machine.*—April 17, 1866.—The travelling truck has a scoop wheel driven by gearing and endless chain propelled by horse power. The truck travels on rails, and the scoops are discharged by a scraper.

Claim.—The arrangement of the bevel wheels *n* and *o*, shaft E, screw cogs *i i*, and toothed wheels *e e*, for the purpose of propelling the machine along the track, and in combination with the track and wheel B, and scraper F, substantially as set forth.

No. 53,951.—JOSEPH C. COULT and JOHN ROACH, San Francisco, Cal.—*Apparatus for Separating Volatile Metals from Ores.*—April 17, 1866.—The volatile results from the furnace are drawn thence by a fan which drives them into a water chamber, where the vapors are condensed and the gases pass off to the chimney.

Claim.—First, the combination and arrangement of the furnace *b*, substantially as described and for the purposes set forth.

Second, the water tank *f f*, plug *g*, with their supply and cooling pipes *f'* and *g'*, arranged substantially as described and for the purpose set forth.

Third, the arrangement of the fan *h*, for the purpose of drawing the fumes from the furnace upon one side, and taking in cold air on the other side, and forcing the whole, with water, into the condenser, substantially as described and for the purpose set forth.

Fourth, the combination and arrangement of the condenser herein described for the purposes set forth.

No. 53,952.—E. Cox, Point Pleasant, Ohio.—*Churn Top.*—April 17, 1866.—A plate, secured beneath the churn lid to prevent the splashing out of milk through the dasher shaf opening and ventilator holes.

Claim.—First, a churn top formed by combining the plate C, constructed as described, with the top or cover A, substantially as and for the purpose set forth.

Second, the combination of the tube E with the plate C and top A, substantially as described and for the purpose set forth.

No. 53,953.—Peter Crans, Jr., Philadelphia, Penn.—*Lamp Burner.*—April 17, 1866; antedated April 3, 1866.—The upper wick tube is adjusted vertically on the wick to graduate the light.

Claim.—The adjustable tube *b'*, arranged above the wick tube *b*, and combined with the rod *d*, and guide rods *c c*, or their equivalents, as and for the purpose set forth.

No. 53,954 —John Crimmins, Detroit, Mich.—*Stove Pipe Drum.*—April 17, 1866.—The cones have alternate marginal and central apertures to compel the passing air into a tortuous course.

Claim.—The construction, combination, and arrangement within cylindrical stove drums of three or more cones, substantially as and for the purposes herein set forth and described.

No. 53,955.—George G. Crowell, Lime Rock, Conn.—*Revolving Fire-arm.*—April 17, 1866.—The shell is ejected from the forward end of the chamber by a spur upon a sliding plate projecting into the rear of the lower chamber. The plate is thrown into engagement with the hammer by a bolt, drawn back by cocking, and projected by the fall of the hammer.

Claim.—In revolving fire-arms, substantially of the character herein described, the employment of a movable part adapted to operate the ejecting mechanism, or to have it unaffected by the movements of the hammer, substantially in the manner and for the purpose herein set forth.

No. 53,956.—Lewis Cutting, San Francisco, Cal.—*Pea and Bean Sheller.*—April 17, 1866.—The corrugated rollers detach and deliver the peas and carry off the pods; the brushes remove particles of pods from the rollers.

Claim.——The combination and arrangement of the inclined feeding apron F, rollers A and B, brushes J J, and rack S', the whole arranged for joint operation, substantially as described for the purpose set forth.

No. 53,957.—P. Daniels, Jackson, Mich.—*Tire Tightener.*—April 17, 1866.—Plates are attached to the ends of a cut tire, and, being bent inward, are drawn together by a right and left-hand screw in a recess of the felloe.

Claim.—The pieces F G, in combination with the tire of a wheel, arranged relatively with the right and left threaded screw, and operating in the manner and for the purpose herein specified.

No. 53,958.—William P. Dillman, Joliet, Ill.—*Harvester Rake.*—April 17, 1866.—The rake is attached by arms to a central vertical rotating post, and is guided by a track on the platform.

Claim.—First, an automatic rake for harvesters, composed of the upright standard *g*, the upper and lower arms *h* and *k*, the rake head *m*, the cross-beam *l*, or their equivalents, all arranged and constructed substantially as described.

Second, the standard *g* passing up through the platform, and at or near the centre of the guide track *d d*, in combination with the upper and lower arms *h* and *k*, substantially as described.

Third, suspending the cross-beam *l* between the upper arm *h* and lower arm *k*, in the manner described.

Fourth, the combination of the guide or track *d d d d* with upper and lower arms *h* and *k*, and standard *g*, with the cross-beam *l*, and rake head *m*, in the manner and for the purpose described.

No. 53,959.—William B. Dodds, Cincinnati, Ohio.—*Lock.*—April 17, 1866; antedated December 12, 1865.—Explained by the claim.

Claim.—First, a dog connected to a sliding or other lock bolt and engaging in the notched tumblers to communicate motion therefrom to the bolt.

Second, a series of notched tumblers J and secondary wheels K, arranged in pairs, when either the tumbler or secondary wheel of each pair is marked with an index scale, the secondary wheels being employed to communicate motion from one tumbler to another, and applied to the faces of their tumblers, and adjustable thereupon by hand, substantially as herein described, for the purpose of setting up any desired combination.

Third, the combination with the knob S, of the spherical ended arbor H R projecting beyond the face of the door as herein represented, so as to avoid weakening the shaft within the door without affording a square external surface against which a direct blow may be struck.

No. 53,960.—ALLEN DODGE, Georgetown, D. C.—*Cultivator and Seeder.*—April 17, 1866.—This machine has a series of ploughs mounted in an adjustable frame, arranged to throw the land into ridges, and followed by smoothing, shaping, and furrow-forming rollers, and seed and fertilizer sower.

Claim.—First, the combination and arrangement of the single ploughs *a* with the double ploughs P, as shown and described, for the purpose of forming the ridges to receive the seed, as set forth.

Second, the rollers B, constructed and arranged to operate in combination with the ploughs, substantially as shown and described.

Third, attaching the ploughs to the frame G, hinged at its rear side, and provided with the lever D, arranged to operate as set forth.

Fourth, in combination with the series of ploughs and rollers B, the seed hopper H, arranged to deliver the seed to the furrows formed by the projections *e*, as herein described.

Fifth, a machine having a series of ploughs, the rollers B, the seeding devices and fertilizer distributor, combined and arranged for joint action, substantially as herein shown and described.

No. 53,961.—R. N EAGLE, Washington, D. C.—*Ruler.*—April 17, 1866.—A ruling edge is imbedded in the face of the frame.

Claim.—A ruler constructed, as herein described, with a ruling edge or guide partially imbedded in a frame of softer or less durable material, and deriving support below and above therefrom.

No. 53,962.—JOSEPH S. ELKINS, Marquette, Wis.—*Broom Head.*—April 17, 1866.—A transverse double-headed hook fastens the clamping link by which the hinged jaws are held shut.

Claim.—The combination of the clamp collar C and the clamp swivel hook or hooks *c c* with the jaws of a broom head, substantially as shown and set forth.

No. 53,963.—HENRY FERRIS, Galesburg, Ill.—*Hedge Plant Grab.*—April 17, 1866.—This limb-grasping tool has two curved prongs spread apart at the top.

Claim.—The grab or implement, constructed and operating as and for the purposes herein set forth.

No. 53,964.—L. V. FICHET, New York, N. Y.—*Still for Petroleum.*—April 17, 1866.—A steam coil below and drum above are placed in a chamber. The petroleum is conducted in a spiral course around the drum and then falls upon the steam coil, the unvaporized residue being discharged below.

Claim.—The drum A, with the helical channel or trough C, in combination with the steam coil D and jacket B, constructed and operating substantially as and for the purpose described.

No. 53,965 —THOMAS FISLER, Camden, N. J.—*Punch Mixer and Egg Beater.*—April 17, 1866.—Explained by the claim.

Claim.—The construction of cup B with the sieve or strainer D attached, to be used in connection with cup A and glass C, the whole arranged substantially as set forth and for the purposes specified.

No. 53,966.—ADDISON C. FLETCHER, New York, N. Y.—*Grate Bar.*—April 17, 1866.—The grate bars are arranged in series of steps with air openings in the risers and bracing flanges below.

Claim.—First, a grate bar, with its face in the form of a series of steps one above another, substantially as and for the purpose herein specified.

Second, in a grate with its face in the form of a series of steps, passages *d d* for the admission of air above the fuel on the steps, substantially as and for the purpose herein set forth.

Third, the longitudinal vertical braces *e e* connecting the transverse webs *a a* and the steps of a step formed grate bar, substantially as herein described.

No. 53,967.—ADDISON C. FLETCHER, New York, N. Y.—*Surface Condenser.*—April 17, 1866.—The stand pipes and their cases are connected with the "hot well" into which the steam from the engine is exhausted; the steam passing through the pipes is condensed by jets of water on their outer surfaces.

Claim.—First, the standing pipes B B, jackets C C, and jet pipes *a a*, in combination with each other, and with a hot well or receptacle A, substantially as and for the purpose herein specified.

Second, the chambers *a a*, in the jackets C C, in combination with the jet pipes *a a*, substantially as and for the purpose herein specified.

No. 53,968.—BENJAMIN FOLSOM, Detroit, Mich.—*Snow, Ice, and Mud Scraper for Railroads.*—April 17, 1866.—The oblique scrapers are pressed upon the track by springs, and are adjusted to their work or held elevated when not used by a wheel and set pin.

Claim.—The combination of the scrapers *a*, the springs B, the wheels E, and the set pins F, in the manner and for the purpose herein described.

No. 53,969.—JOHN FOX and SAMUEL C. RIDGAWAY, Baltimore, Md.—*Harvester.*—April 17, 1866.—Explained by the claim.

Claim.—First, the box frame constructed by casting the same as one piece, whereby the bearings of the pole and the driver's foot rest, and the main or driving wheel's axle, and the means for connecting the same with the frame bar of the machine are made up of one piece of metal, as herein recited.

Second, the arrangement of the driver's seat *u*, the bars *v* and *w*, the lever *n*, bars *y* and the pole, in their relation to each other and to the driving wheel and the machine, as and for the purposes herein set forth.

No. 53,970.—JOHN A. FREY, JOHN ALLEN, and GASTON D. SMITH, Washington, D. C.—*Barrels, &c.*—April 17, 1866.—The overlapping portions of sheet metal are "shut" together and the seams closed by dipping in a bath of molten zinc.

Claim.—The construction of a metallic barrel or vessel, made impervious and solid by galvanizing as herein described, and for the purposes set forth.

No. 53,971.—J. W. GIBBS, New Haven, Conn.—*Car Brake.*—April 17, 1866.—The collision of the cars due to their momentum when the speed of the engine is checked, and whether moving forward or backward, operates through the bumpers upon levers to bring the brakes into action; stretching out the train releases the brakes.

Claim.—First, the combination and arrangement of the levers J J′, operating the brake mechanism of the trucks, the lever I operated by the drawhead and the lever M, which is held fast in one of two positions with the rods connecting them, the whole operating substantially in the manner and for the purpose aforesaid.

Second, the arm *g′*, and rod *f′*, which usually lie in one line so as to hold the lever M securely with the spring *n′*, to keep the above parts in a line, operating substantially in the manner and for the purpose aforesaid.

Third, the three-armed sleeve *h**, or its mechanical equivalent, operated by the levers in the trucks which support the shoes, to start the arm *g′* and rod *f′*, from the line in which they lie, substantially in the manner and for the purpose aforesaid.

Fourth, the oblique rods *v* to operate substantially in the manner and for the purposes aforesaid.

No. 53,972.—CHARLES M. GILBERT, Philadelphia, Penn.—*Bedstead Fastening.*—April 17, 1866.—A staple projecting from the end of the rail enters a slot on the post and is there fastened by a wedging transverse key.

Claim.—The key or pin having the shape which prevents its slipping out of place or working loose, and containing an inclined plane, and the mode of applying the said key or pin as set forth, for the purpose specified.

No. 53,973.—GEBHARD HAGENMEYER, Big River, Cal.—*Grease Cup.*—April 17, 1866.—The two valves on the same stem, one a little more distant apart than are their seats; the revolution of the stem by bringing one or the other of the valves to its seat, establishes communication between the supply cup and the globe, or between the latter and the valve chest.

Claim.—The valves *f f′*, spiral planes *i i′*, and pins *h h′*, in combination with the supply cup *a* and globe *b* of a grease cup, constructed and operating substantially as and for the purpose described.

No. 53,974.—JAMES HARRISON, Jamestown, N. Y.—*Deep Well Pump.*—April 17, 1866.—The anchor is attached to the downward extension of the piston rod and reciprocates in the chamber below the foot valve through which the said rod passes; the anchor working in its chamber assists in operating both valves and facilitates the escape of gas.

Claim.—First, the anchor chamber C, including the anchor K and rod H, for the purpose and substantially as described.

Second, the anchor chamber, including its anchor and connecting rod, in combination with the upper and lower valves, substantially as described.

Third, the combination and arrangement of the check ring R, (fitted into an appropriate seat *r′*, in the pump barrel,) with the valve G and anchor K, the ring forming a check to the movements of the valve, and with the anchor acting as a "jar," for the purposes and substantially as described

53,975.—G. W. L. HAZEN, Franklin, Ind.—*Evaporator.*—April 17, 1866.—The transverse pocket is under the rear end of the pan next the chimney. The shallow partitions afford circulation of the liquid beneath and the scum above.

Claim.—First, constructing the pan of an evaporator with a pocket G, substantially as and for the purpose set forth.

Second, in the pan of an evaporator the bars C having narrow openings below them, and made so shallow as compared with the depth of the pan that the scum may flow freely over them, thus establishing counter currents, substantially as and for the purpose set forth.

No. 53,976.—Joshua Hendy, San Francisco, Cal.—*Concentrator.*—April 17, 1866.—The oscillating pan is attached to a vertical shaft. The ore passes from the central hopper over the convex cover to the inner margin of the pan, which has a central outlet and a gated discharge opening at its periphery.

Claim.—First, the curved bottom of the pan having its greatest inclination near the central discharge and gradually diminishing in inclination as it approaches the periphery of the pan, substantially as described and for the uses and purposes hereinbefore set forth.

Second, the pan with a regular or graduated curved bottom.

Third, the pan with a bottom so constructed as to have a downward inclination toward the discharge D at its periphery, at the same time the rim of the central discharge shall be in a horizontal position, so that the discharge shall be uniform, substantially as described and for the uses and purposes set forth.

Fourth, the horn-shaped cavity or trough C, in combination with oscillating pans or concentrators, as herein described.

Fifth, the horn-shaped trough in combination with pans or concentrators, having curved or convex bottoms.

Sixth, the shaft S, with screw *m*, and crank or nut *p*, and step F, or their equivalents, for the uses and purposes hereinbefore set forth.

Seventh, the oscillatory pan with curved or convex bottom, horn-shaped cavity C, outlets X D and E, in combination with the adjustable shaft S, substantially as described and for the uses and purposes as hereinbefore set forth.

No. 53,977.—Joshua Hendy, San Francisco, Cal.—*Saw Mill.*—April 17, 1866.—The frame is so arranged that the saws are adjustable on their mandrels as well as to the stuff to be sawed, together with the guides which steady the saws.

Claim.—First, in saw mills constructed substantially as described, the sliding or movable frame for supporting a gang of circular saws working at angles with vertical, circular, or other saws, which said frame is arranged and operated as hereinbefore shown and set forth.

Second, in mills for sawing lumber or other material, the saw guide in combination with the means for adjusting the same both radially and transversely in relation to the saw, as herein shown and described.

Third, in the saw guide constructed as above described, the jaws for adjusting the saw blade in combination with a slide adjustable by spring and lever in a supporting block, which in its turn is adjustable upon the mill frame, as shown and set forth.

Fourth, in saw mills constructed substantially as herein described, the saw guides for a gang of circular saws as set forth, said guides being secured to a plate or shield and adjustable thereto, in the manner and by the means herein set forth.

Fifth, in machines as herein described, the arrangement of the tightening frame of the mechanism to transmit movement from the prime mover, the frame having its bearings on the journal boxes of the stationary pulley, by means of which boxes it is pivoted to the stationary frame of the saw mill, substantially as and for the purposes set forth.

Sixth, the construction and arrangement herein described of the trucks of the feed carriage for a saw mill, whereby the truck is made self-lubricating and kept from being clogged up by dust or dirt, substantially as shown and set forth.

No. 53,978.—Allen Hildebrand, Dubuque, Iowa.—*Washing Machine.*—April 17, 1866.—Spiral springs beneath the bed elevate it against the oscillating rubber. The slats are quadrantal in cross section.

Claim.—First, the employment of spiral springs G, and the rock bars H, in combination with the slat carriage F, substantially as and for the purpose specified.

Second, the quadrangular slats *c c*, secured to the springing frame or carriage F, in combination with the rollers E, made substantially as and for the purpose specified.

No 53,979.—Peter Hogan, Albany, N. Y.—*Gas Carburetting Apparatus.*—April 17, 1866.—The vessel is divided by horizontal perforated partitions. The gasolin in the lower chamber passes by capillary attraction through wicking to the stratum of charcoal which forms the carburetting chamber; excess of saturation is arrested in the stratum of silica.

Claim.—First, in a carbonizing apparatus for improving the quality of illuminating gas, the application and use of the perforated plate or diaphragm H^1 for spreading or diffusing the gas before it passes through the carbonizing chamber C.

Second, in such carbonizing apparatus, the application and use of the carbonizing chamber C, filled with granulated charcoal or its equivalent, which is confined between perforated plates H^2 and H^3, substantially as described.

Third, in an apparatus of the character above described, the application and use of the regulating chamber E, with its contents of granulated silica or its equivalent, constructed substantially as and for the purpose described.

Fourth, in an apparatus for enriching and purifying gas, the use of granulated charcoal in the carbonizing chamber, which, while it enriches the gas, will also effect in a great degree its purification.

Fifth, in an apparatus of the character herein contemplated, the combination of the perforated plate H^1, the carbonizing chamber C, and the regulating chamber E, constructed and arranged substantially as above described.

No. 53,980.—James Hotchkiss and Ezra Buss, Springfield, Ohio.—*Brick Machine.*—April 17, 1866.—The hinged lids of the followers deliver the bricks on to the mould wheel. The rear edges of the moulds have detachable steel strips. The scraper is connected to the striking plate.

Claim.—Attaching the spring scraper L to the removable plate M, so as to be removed therewith, substantially as and for the purpose herein specified.

Also, hinged lids upon the followers, substantially as and for the purpose herein set forth.

Also, the lifting bolt *b*, and its cam H, in combination with the hinged follower lids, substantially as and for the purpose herein specified.

Also, the springs *c c*, in combination with the lifting bolts *b b*, for the purpose set forth.

Also, the metallic edge strips *a a*, for the purpose specified.

No. 53,981.—Thomas M. Howard, Charlestown, Penn.—*Drilling Machine.*—April 17, 1866.—The fly-wheel is turned by one hand rotating the drill; the depression of the lever rotates the pinion and makes the rack descend; a new hitch is obtained by pressing the trigger, disconnecting the tooth in the pinion, and engaging it in another place.

Claim.—The combination of the lever N, lever P, with its pin *t*, spindle *n*, with its holes *u*, wheel *m*, sliding rack M, and drill spindle H, the whole being arranged and operating substantially as and for the purpose herein set forth.

No. 53,982.—Charles B. Hutchinson, Auburn, N. Y.—*Machine for Chamfering and Crozing Staves.*—April 17, 1866.—The staves are inserted singly, bent into their ultimate shape, and in this position fed successively to the chamfering and crozing tools.

Claim.—First, a machine, substantially as herein described, and adapted to receive staves successively and force them to the chamfering and crozing knives or cutters, while they are guided and held in the relative position they are to occupy in the completed cask or barrel, with their joints in close contact, each stave being moved forward by pressure from the succeeding one and discharged from the machine when completed.

Second, the arm L, arranged within the curved bar K, and operated as shown, or in any equivalent way, for the purpose of giving the staves the necessary bilge or bulge form, prior to the action of the crozing and chamfering cutters upon them, substantially as shown and described.

Third, the arms C C, operated substantially as shown in connection with the heads B B and guides *a a*, for the purpose set forth.

No. 53,983.—Charles B. Hutchinson, Auburn, N. Y.—*Machine for Bending Staves.*—April 17, 1866.—The steamed staves are clamped in a rack and kiln-dried, so as to assume and retain the shape required.

Claim.—A clamp or former, adapted to impart the desired bilge or bulge form to staves for casks or barrels when in a soft and pliable state and retain them in such form while drying, substantially as and for the purpose herein described.

No. 53,984.—Josiah Jacoby, Doylestown, Ohio.—*Eave Trough.*—April 17, 1866.—The loop is screwed to a shank which is nailed to the plate.

Claim.—The construction and arrangement of the bracket A in combination with the hanger D and trough, when combined in the manner and for the purpose set forth.

No. 53,985.—W. R. Jenkins, Jr., and H. D. Landis, Bellefonte, Penn.—*Slide Valves for Steam Engines.*—April 17, 1866.—The pressure of the legs upon the seat is relieved by the ledges in the steam chest upon which the upper plate of the valve slides.

Claim.—The combination of the plate B and hollow-legged valve G, arranged relatively with the steam chest A, chamber C, and ledges D, in the manner and for the purpose herein specified.

No. 53,986.—John M. Johnson, Mamaroneck, N. Y.—*Button.*—April 17, 1866.—The pointed stud on the rear plate enters the tubular shank of the button, and is retained by a spring pin which engages a notch in the stud.

Claim.—The pointed stud A, with its U-shaped groove, as described, in combination with the pin C projecting from the inner surface of the tubular socket *b* of the button B, and with a spring *d*, constructed and operating substantially in the manner and for the purpose herein specified.

No. 53,987.—Sylvanus D. Jones, Providence, R. I.—*Flour Sifter.*—April 17, 1866.—A flat coil of silvered wire is adapted to vibrate over the meshes of the sieve and expel the flour.

Claim.—A sifter constructed and arranged to be used in connection with a common sieve, substantially as described.

No. 53,988.—W. O. Jones, Portland, Me.—*Steering Apparatus.*—April 17, 1866.—The rudder head is fitted with radial flanges, which act as pistons and reciprocate in the annular cylinder. The tiller shaft reciprocates a piston in the upper cylinder, whose contents are conducted by pipes to the annular cylinder to actuate the rudder.

Claim.—First, the combined use of atmospheric air and oil in the above-described apparatus, in the manner and for the purposes described.

Second, the combined arrangement of the cylinder *e*, piston *f*, divided air chamber *a b*, tubes *l l'*, *m*, *n*, *c*, and *d*, with the divided chamber *p'* and revolving cylinder *q* and levers *g g*, all as and for the purpose herein specified.

Third, the chamber *p'* constructed with the stationary and movable divisions, as and for the objects described.

No. 53,989.—CHARLES and AUGUSTUS KAESTNER, Chicago, Ill.—*Grinding Mill.*—April 17, 1866.—The runner revolves vertically; the stationary stone is adjusted in position by radial pivots and rollers.

Claim.—The adjustable and radial pivots, provided with rollers J working in grooves on the frame to support the stationary stone, in combination with the pivoted bracket J', arranged as described for the purposes set forth.

Also, making the pivots adjustable on the edge of the stationary stone, substantially as described, for the purpose of balancing the stone.

No. 53,990.—WM. S. KELLY, Schenectady, N. Y.—*Deep Well Pump.*—April 17, 1866.—A double-acting force pump, with independent induction chambers communicating with the cylinder above and below the plunger. The induction valves are in a vertical line, and one passage leads over the other.

Claim.—First, constructing the pump with separate and independent receiving valve chambers E G, or their equivalents, as described, said chambers being within the circumference of the base of said cylinders, and also communicating with the interior of piston cylinder, both below and above the piston, substantially as and for the purpose set forth.

Second, an induction valve chamber communicating with the interior of the top of the piston cylinder, in combination with another induction valve chamber communicating with the interior of the bottom of the piston cylinder, both of said chambers communicating with a central discharge pipe, and being arranged within the circumference of the pump, substantially as described.

Third, the inverted arched passage or passages F F leading from a valve chamber E, and communicating with an induction chamber *a* surrounding the pump cylinder A, in combination with the valve chamber G, substantially as described.

Fourth, the pump base, with a valve chamber G, and a jacket C' entirely encircling the same, in combination with the valve chamber E, substantially as described.

Fifth, the combination of the cylinders A and C with valve chambers E and G and the hollow discharging piston and piston rod B B', substantially as described.

No. 53,991.—CHARLES LANG, Bergen, N. J.—*Manufacture of Lace Paper.*—April 17, 1866.—The paper is embossed between cameo and intaglio dies, and is removed with its cameo die to an abrading roller, which removes the raised portion, leaving "lace paper;" the blower removes the debris.

Claim.—First, the paper-lacing machine substantially as herein described, consisting of a press, an adjustable vibrating and rotating drum, or its equivalent, and a sucking blower, for the purpose set forth.

Second, the dropping plate under the drum or roller G, substantially as described.

Third, the sliding feed *g*, in combination with the sliding plate *n*, substantially as described.

No. 53,992.—ISAAC S. LAUBACK, New York, N. Y.—*Drill and Crane Attachment.*—April 17, 1866.—Vertical and horizontal shafts, having their bearings in the frame and connected by gearing, operate the drill rod attached by a universal joint to the outer end of the shafting.

Claim.—First, in combination with the post and arm of a crane, the vertical and horizontal driving shaft C E, when fitted with the necessary cog wheels and connection to drive a drill spindle, substantially as set forth.

Second, the movable bracket K, in combination with the shaft C and the arm of the crane B, for the purpose of carrying the driving wheels *i* J and the drill spindle R.

Third, in combination with the arm of the crane, the drill spindle *t*, when connected by means of the universal joint *r*, for the purpose of drilling holes under said arm at an oblique angle therewith.

Fourth, in connection with the drill spindle *t* and the crane arm, the lever *z* connected to the arm of the crane, so that the power which presses the drill forward will also tend to draw the beam down, instead of pressing it up, substantially as described.

No. 53,993.—G. R. H. LEFFLER, Baltimore, Md.—*Taking Air off Chill Moulds.*—April 17, 1866.—Perforations around the space in the mould at the junction of its parts lead to channels by which the air is discharged.

Claim.—Providing the chill moulds with a number of small air openings leading from the interior space to the outside, for the purpose of making vent for the air contained in the space when the molten metal is poured in.

Also, the combination described and represented of the passages F and channels G, substantially as described.

No. 53,994.—Robert Lissenbee, Greenville, Tenn.—*Pivot Lathe.*—April 17, 1866.—The staff on which the pivot is to be turned is sustained in a laterally adjustable rest, with an axial support in the rear; the head which supports the spindle of the cutting tool is adjustable laterally; the shank of the burnisher is socketed in a transversely-adjustable rest.

Claim.—First, the heads A A′ of a watchmaker's pivot lathe, split as described, in combination with the rest F and the screw D and spring E, whereby the heads may be adjusted laterally so that their axes may be in different perpendicular planes, as set forth.

Second, the adjustable rest G for receiving a burnishing tool, as set forth, in combination with the heads A A′, arranged and operating as described, and in one of which another burnishing tool may be used at the same time, as described.

No. 53,995.—Dennis G. Littlefield, Albany, N. Y.—*Base Burning Stove.*—April 17, 1866.—The upper and lower sections of the magazine are locked together by a hook. An annular and perforated plate is fitted to rotate within the inner margin of the fire pot.

Claim.—First, the employment of the curved hook C, when used in combination with the upper and lower sections of the magazine or self-supplying cylinder A and B, constructed and arranged in the manner and for the purposes substantially as herein described and set forth.

Second, the employment of the annular agitator, damper, or valve D, constructed, arranged, and combined with the fire pot or fire chamber E, in the manner and for the purposes substantially as herein described and set forth.

No. 53,996.—Benjamin T. Loomis, New York, N. Y.—*Expanding Tap and Reamer.*—April 17, 1866.—The inner sides of the cutters are attached to a conical plug, which extends them radially to cut a dovetailed or undercut recess.

Claim.—The dovetailed cutters D or E, dovetail grooved plug C and screw B, in combination with the holder A, all constructed, arranged, and operating in the manner and for the purpose herein specified.

No. 53,997.—G. T. Lozier, Philadelphia, Penn.—*Foot Scraper.*—April 17, 1866.—The metallic strips present their edges upward, and are fastened to bars within the box.

Claim.—A shoe scraper, composed of a pan or box, and thin or sharp-edged strips of metal, secured to the same, substantially as set forth.

No. 53,998.—Thomas T. Markland, Jr., Philadelphia, Penn.—*Water Cooler.*—April 17, 1866.—The water from the upper reservoir passes through a filter and tube to the service chamber, which is surmounted by an ice box.

Claim.—The combination of the reservoir E, valve tube H, cistern C, and ice chamber B, arranged and operating in relation to each other substantially in the manner described and for the purpose specified.

No. 53,999.—Charles McBurney and James B. Forsyth, Roxbury Mass.—*Manufacture of India-rubber Tubes, &c.*—April 17, 1866.—The roll to be vulcanized is placed upon a mandrel, its ends supported by circular flanges and the periphery wrapped with sheet metal or fabric.

Claim.—The mandrel B, with its heads C D, one or both being made removable, substantially as and for the purpose set forth.

Also, in combination with the above, the employment of sheet metal in any form as a wrapping for the article while being vulcanized, substantially as described.

No. 54,000.—Almeron McKenney, Maumee, Ohio.—*Grub and Stump Machine.*—April 17, 1866.—The lever is supported upon an axle and wheels. When in vertical position it is attached by a grab hook and biting tooth to the stump, the flanges on the axle and the braces pivoted to the axle, and engaging with the cogs on the wheels give additional support.

Claim.—First, the shape and construction of the lever D, when provided with the bite H, used as and for the purposes herein set forth.

Second, the axle L, with flanges K K, ears *n n*, and wings *q q*, arranged with the stirrup M to give additional strength, and effectually support the lever, substantially as and for the purposes herein specified.

Third, the brace hooks I I, and cog wheels B B, attached to the inner side of the wheels A A, when used as and for the purposes set forth.

Fourth, the extended hook E, constructed and applied as and for the purposes herein shown.

Fifth, the slotted bar P, lever hook O, and grappling hook S, arranged and used as and for the purposes herein described.

No. 54,001.—Oren E. Miles, Aurora, Ill., assignor to David B. Turnbull, same place.—*Wagon.*—April 17, 1866.—The central opening receives the coupling pole, and the braces are bolted in the side openings.

Claim.—The cast-iron box, with its central opening and projecting flanges in one piece, for the purpose of receiving and securing the ends of the braces to the coupling reach, as herein shown and described.

No. 54,002.—William J. Millar, McKeesport, Penn.—*Rudder for Steering Vessels.*—April 17, 1866.—Explained by the claim.

Claim.—The improvement in rudders for vessels hereinbefore described, consisting of the adjustable flap *c*, interposed between the side pieces *b* of the rudder, and pivoted to its toe at *d*, so as to be raised or lowered to diminish or increase the submerged area of the rudder, substantially as described.

No. 54,003.—Freedom Monroe, Bruce, Mich.—*Land Leveller.*—April 17, 1866.—A sled with scrapers, wheels, and an axle admit of the vertical adjustment of the scrapers in the sled, or by bearing the whole weight of turning or removing the machine.

Claim.—First, in combination with runners A A, the scrapers L L, when said runners are made with the joint thereon, as described.

Second, in combination with said runners and scrapers, the axletree E, and its wheels D, for the purpose of raising and lowering the scrapers, and for the purpose of turning and transporting the machine. as described.

Third, the lever H and the cord *d*, in combination with the rear part of the machine, for the purpose of raising the rear scraper in the manner described.

Fourth, the lever C, arranged across the top of the machine, for the purpose of raising it against the axletree, substantially as described.

No. 54,004.—Freedom Monroe, Bruce, Mich.—*Bridge.*—April 17, 1866.—Cap pieces are applied to the tops and ends of the timbers to protect from rain.

Claim.—Protecting the main timbers of the bridge from the effects of the weather, by combining the roofing pieces B B′ B″ B‴ D D′ D″ F F′ N N′ and H with them respectively, substantially as shown and described.

No. 54,005.—Thomas Moore, New York, N. Y.—*Feeding Hay Rack.*—April 17, 1866 —The feed is thrust against the grated top of the box by followers and springs beneath.

Claim.—An improved horse hay rack, constructed and arranged substantially as herein described, and for the purposes set forth.

No. 54,006.—William J. Morton, Cincinnati, Ohio.—*Rotary Engine.*—April 17, 1866.—The revolving abutment or cut-off is combined with the induction and eduction valves in the steam channel which surrounds the cylinder. The head of the cylinder is made to divide on a line through the axes of the piston and abutment.

Claim.—First, the cut-off B in combination with valves *d*, reversing rods *g*, and rod *h*, all arranged and operating as specified for the purpose set forth.

Second, the valve or valves *d*, reversing rods *g*, and rod *h*, constructed and operating as above described and set forth.

Third, the cylinder A and cylinder heads D and D′, constructed as above specified, and for the purpose set forth.

No. 54,007.—John K. O'Neil, Kingston, N. Y.—*Horse Hay Fork.*—April 17, 1866.—The lifting ring is attached to the plunger rod of a spring balance and the barrel to the fork; the weight suspended is indicated by the retraction of the plunger.

Claim.—The combination of a weighing device and horse hay fork in such manner that the weight of the load will always be indicated when the fork is elevated, substantially as described.

No. 54,008.—George R. Osborn and John Crandell, Ilion, N. Y.—*Boot Jack, Nut Cracker, Tack Hammer, and Tack Puller.*—April 17, 1866 —Consists of two parts. The hammer and claw are at the respective ends of the piece which forms the lever of the nut cracker; the base piece is a boot jack and affords a jaw in opposition to the lever jaw.

Claim.—First, a boot jack, nut cracker, tack hammer, and tack puller combined, substantially as specified.

Second, a combined boot jack and nut cracker, substantially as specified.

Third, the adjustability of the bar or lever B upon its fulcrum *h* to suit different sized nuts, substantially as specified.

No. 54,009.—Rufus S. Pickett, New Haven, Conn.—*Self-feeding Water Tank.*—April 17, 1866.—The tank has a vertical motion in guides and a counter weight; the full tank descends and stops the supply, and conversely.

Claim.—The combination of the tank A, weight D, or its equivalent, and inlet pipe E, constructed and arranged to operate in the manner substantially as herein set forth.

No. 54,010.—Charles L. Pierce, Buffalo, N. Y.—*Shingle Machine.*—April 17, 1866.—The shingle blocks are presented to the saw alternately on opposite sides. The reciprocating block carriage is supported on a tilting track alternately inclined to the plane of the saw in opposite directions. The blocks are tilted by a rotary table so that the butts are cut from alternate ends of the blocks.

Claim.—First, the tilting track E in combination with the reciprocating block carriage when arranged and operating in the manner and for the purpose substantially as described.

Second, the inclined rotary block table K for tilting the shingle blocks, substantially as described.

Third, the combination with the tilting table N of the rotary adjustable cam arms n^2 for tilting the shingle blocks, substantially as described.

No. 54,011.—G. R. PLATT, Brooklyn, N. Y.—*Oil Well Drill.*—April 17, 1866.—The vertical motion of the drill rod is adjusted and its rotation imparted by the devices described in the claim.

Claim.—First, hanging the drill rod to the outer end of the walking beam operated at its inner end by and through a series of one or more adjustable arms b', arranged together and operating substantially as herein described.

Second, the combination of the pulleys h n and p with the drill rope l, or its equivalent, arranged together and operating as and for the purpose specified.

Third, the slide catch g' of the drill-rod rope in combination with the spiral or twisted guide rod or rods f' f', arranged and operating as and for the purpose described.

No. 54,012.—CONDIT PRUDDEN, Philadelphia, Penn.—*Wood Bending Machine.*—April 17, 1866.—The mould permits a piece intended to form part of a saddle tree to be clamped on each side.

Claim.—So constructing the former, the bar mould M, that two pieces B can be bent in proper shape at the same time upon opposite sides of the former and held in contact by the clamps, substantially as described.

No. 54,013.—JAMES F. QUIMBY, Stetson, Maine.—*Churn.*—April 17, 1866.—Explained by the claim.

Claim.—Combination of churn A, dash D, rod E, balance F, elastic friction pulley G, driving wheel H, and crank I, when the whole are arranged to operate substantially in manner as described and shown.

No. 54,014.—ANDREW RALSTON, West Middletown, Penn.—*Apparatus for Collecting Floating Oil.*—April 17, 1866.—The surface oil is conducted by booms to a float where a wheel with scoops lifts it and discharges it into a reservoir.

Claim.—First, the lifting wheel, with its troughs, as arranged in relation to the descending plate R, whether curved or vertical, all substantially as shown and described.

Second, the arrangement of the sections V and ropes W W', as described, pulleys x, ropes a, pulley Y, in combination with the rope U, suitably elevated, and operating in the manner and for the purpose herein described.

No. 54,015.—GEORGE M. RAMSAY, New York, N. Y.—*Constructing Fruit Jars.*—April 17, 1866.—The oval mouth admits the oval flange of the lid, the rotation of the latter brings the major diameter of the flange coincident with the minor axis of the opening and locks the flange under the neck of the bottle.

Claim.—The oval or elliptic mouth and oval or elliptic lid, substantially in the manner and for the purpose herein described and shown in Figs. 1 to 7, inclusive, together with the letters of reference marked thereon.

No. 54,016.—PHILIP REUTLINGER and ALBINE HERBERT, Williamsburg, N. Y.—*Liquid Cooler.*—April 17, 1866.—One trough sets within the other, and together they form a gradually descending coil traversed by the liquid to be cooled and the refrigerating liquid respectively.

Claim.—The arrangement of the double trough A formed in an open coil in combination with regulating valves B, constructed and operating substantially as and for the purpose described.

No. 54,017.—JOHN I. ROBBINS, Cincinnati, Ohio.—*Tobacco Cutting Machine.*—April 17, 1866.—A rubber covered platform slides under a gate with knives parallel to its line of motion and others transverse thereto; fingers hold down the cut sections; gauged racks of varying scales are adapted for varying work.

Claim.—First, the combination of knives K G and the yielding cushion C, composed of India-rubber, leather, cork, sail cloth, or any other suitable material.

Second, the adjustable fingers or tongues L L', &c., for preventing the tobacco from being lifted, and also for cleaning the knives.

Third, the series of scales or gauge racks a'' a''' a'''' in the described combination with the sliding table B and pawl b, for regulating the length of the plugs.

No. 54,018.—ADALINE A. ROCKWELL, New York, N. Y.—*Trimming for Wearing Apparel.*—April 17, 1866.—The edge of the serpentine braid is sewn between the edges of the folded band.

Claim.—A trimming composed of serpentine braid and a double band combined, substantially as herein specified.

No. 54,019.—Henry Rogers, Eureka, California.—*Shingle Machine.*—April 17, 1866.—An inclined gauge is fixed on each side of a circular saw so that as the carriage reciprocates over these beds the bolt is inclined to give the taper to the shingle.

Claim.—The fixed inclined gauges H H in combination with the circular saw F and reciprocating carriage I, substantially as and for the purpose set forth.

No. 54,020.—M. M. Rounds, New Haven. Conn.—*Head Light.*—April 17, 1866.—Of the two openings in the base, the rear one for the time being supplies the air.

Claim.—First, the foraminous openings J J, as represented, one in front and the other in rear, so that when the train is in rapid motion the front orifice may be closed and the rear one open, and when the train is moving slowly, the rear opening may be closed and the front one opened, so as to equalize the flow of air to the lamp, substantially as shown and described.

Second, the said foraminous openings in combination with the cold-air chimney M, substantially as shown and described.

No 54,021.—William Rudolph and Augustus Braun, San Francisco, Cal.—*Gun Lock.*—April 17, 1866.—To avoid cutting a lock chamber in the stock, the side or lock plate has a recess which contains the operative parts.

Claim.—First, a lock plate, with a projection on one side and a chamber or cavity on the opposite side, to contain the tumbler, sear, and springs, substantially as described.

Second, in combination with the chamber or cavity above claimed, the movable plate I, for covering and protecting the mechanism of the lock, substantially as described.

No. 54,022.—J. B. Rumsey, Tiffin, Ohio, assignor to J. G. Rumsey.—*Button Fastening.*—April 17, 1866.—The shank has a bent head, which passes through a slot in the washer, is rotated, and secured in the rear.

Claim.—The button A, provided with a shank B, upon which is formed a bar *x*, when used in combination with the plate D, slotted and raised on the under side in the peculiar manner herein represented, the several parts being constructed and used as and for the purpose specified.

No. 54,023.—S. L. Sage, Huntington, Ohio.—*Sheep Holder and Shearing Table.*—April 17, 1866.—The sheep is strapped in a trough, which is so pivoted as to give any presentation to the shearer, and to dump the animal when the operation is concluded.

Claim.—The holder or table H, pivoted to the arm E, in combination with the adjustable standard B, and standard F, arranged in the manner and for the purpose substantially as set forth.

No. 54,024.—Augustus W. Scharit, St. Louis, Mo., and Leopold Oppenheimer, Washington, D. C.—*Trunk Lock.*—April 17, 1866.—Changeable secret fastenings are secured on the inside of the trunk, and controlled by the outside ornaments in a pre-arranged sequence and combination.

Claim.—A fastener or guard for trunks, constructed and operating substantially as described, so as to be susceptible of a variety of combinations and changes at the will of the owner or operator, and by which the trunk is prevented from opening.

No. 54,025.—Thomas A. Searle, Providence, R. I.—*Globe Valve.*—April 17, 1866.—The depression of the valve brings its soft metal face upon the annular projection on the valve seat.

Claim.—First, the soft metal disk or ring D, in combination with the face of the valve B and seat E, constructed and operating substantially as and for the purpose described.

Second, the annular rim *b*, on the seat E, in combination with the soft metal disk or ring D on the face of the valve B, constructed and operating substantially as and for the purpose set forth.

No. 54,026.—Austin Seely, Alton, Ill., and John McCabbell, Keokuk, Iowa.—*Valve Gear.*—April 17, 1866.—A variable motion is given to the reciprocating connecting link by pivoting it in a slotted arm, which receives its motion from a cam and an eccentric, which operate its respective ends. The eccentric rod has hooks, which allow it to slip at certain parts of its stroke.

Claim.—First, the reciprocating and vibrating link C, and adjustable wrist pin connection *h*, for producing the variation in the closing of the receiving valves, substantially as described.

Second, the hooked rod *e*, in combination with the vibrating link C, and reciprocating slide D, the latter being operated by means of a full stroke cam or eccentric, substantially as described.

No. 54,027.—John F. Shearman, Brooklyn, N. Y.—*Percussion Fuze for Explosive Shell.*—April 17, 1866.—The plunger of the fuze has two nipples, and is held by a weak pin which engages with a circumferential groove in the plunger, to allow it to rotate in its chamber by the rifling action of the projectile.

Claim.—First, the mode herein specified of allowing the projectile to rotate without at first revolving the percussion hammer for preventing injury to the screw, or its equivalent, that holds said percussion hammer when the shell is projected, as set forth.

Second, in combination with the plunger *g*, fitted so that it can rotate as set forth, two or more nipples, fitted to said plunger, as and for the purposes specified.

No. 54,028 —GEORGE B. SIMPSON, Washington, D. C.—*Amalgamator.*—April 17, 1866.—The ore is fed by a hopper to a horizontal cylinder above a furnace. Here it is stirred by the spiral blades of a revolving shaft, which convey it to a vertical cylinder whose blades force it into the mercury bath.

Claim.—First, a horizontal cylinder larger at one end than at the other, in combination with an upright cylinder attached at the smaller end, and a downright hour-glass cylinder attached at the larger end, and in combination with the furnace, pump, and mercury bath tub.

Second, the horizontal screw-flanged wheel, agitator, stirrer or mixer, in combination with the perpendicular rotating flanged cone and external cylinders.

Third, the amalgamation of gold and other precious metals by passing a continuous current of finely pulverized ores through the vapor of mercury in an open vessel, in combination with the agitators and cylinders.

Fourth, the reassociation of the vapor of mercury and the granulated amalgams with the mercury again, by passing them into a bath of cold mercury, which retains them, in combination with the cylinders, agitators, and the mercury bath tub or vessel, substantially as hereinbefore described.

No. 54,029.—JAMES B. SKINNER, Rockford, Ill.—*Gang Plough.*—April 17, 1866.—The ploughs are arranged behind, and are adjustably pivoted to the rigid frame. The tongue is optionally made rigid or flexible. The brace rod governs the relation of the ploughs to the frame.

Claim.—First, the combination of the ploughs in a gang plough, with the main frame constructed, arranged, and operating substantially as described when all arranged behind the axle and rendered adjustable, substantially as and for the purpose set forth.

Second, the combination of the tongue, the main frame and the locking lever, substantially as and for the purpose set forth.

No. 54,030.—CHESTER F. SMITH, Litchfield, Conn.—*Stone and Root Digger.*—April 17, 1866.—To the beam are attached cutter prongs for digging stones and grubbing roots. A roller is pivoted in the rear, to be used when required to limit the depth of penetration. A bog cutter takes the place of the grubbing prongs.

Claim.—The short beam A, roller frame D, and roller B, as constructed, and operating in the manner described, in combination with the prongs *d d*, which support and brace the handles *c c* on the bog cutter E and braces K K, substantially as and for the purposes herein set forth.

No. 54,031.—SIDNEY SMITH, Greenfield, Mass.—*Heating Stove.*—April 17, 1866.—The stove and its water vessel above are enclosed by a jacket whose valved openings conduct to the room, or by pipes to another apartment.

Claim.—The combination or arrangement of the stove A, and jacket B, provided with the valved openings E and the valved openings F, substantially as and for the purpose set forth.

Also, the steam generator G, placed within the jacket B, as and for the purpose set forth.

No. 54,032.—WM. SNYDER, Wooster, Ohio.—*Sliding and Swinging Gate.*—April 17, 1866.—Cross battens, secured to the diagonally set posts, support rollers on which the gate swings horizontally.

Claim.—The roller F, battens D, and diagonal posts A, all to be used in combination with a sliding and swinging gate, substantially as and for the purposes set forth.

No. 54,033.—NATHAN H. SPAFFORD, Baltimore, Md.—*Machine for Bundling Bristles.*—April 17, 1866.—A handful of bristles are set, butt downward, on a plate, and grasped between jaws with semi-circular faces. A wrapper and ring envelop them.

Claim.—First, the sliding plate C, and blocks D and F, constructed and operating substantially as and for the purposes herein specified.

Second, in combination with the blocks D and F, the levers E and G, when constructed substantially as and for the purposes set forth.

Third, the treadle M, levers L and K, cam H, and roller *d*, constructed, combined and arranged substantially as described.

Fourth, the entire machine, with its various devices, constructed, combined and arranged substantially as and for the purposes expressed.

No. 54,034.—NATHAN H. SPAFFORD, Baltimore, Md.—*Machine for Combing Bristles.*—April 17, 1866.—The bristles are placed on a travelling belt, grasped by their butts by a pair of belts while their tops are combed. Afterwards their tops are grasped while their butts are combed by a second comb.

Claim.—First, adjusting the pulleys A E G I K M S and T, in an inclined position, substantially as and for the purpose herein specified.

Second, the drum and cog wheel N, drum Q, and the shafts thereto, in combination with the belt P, and plate O, constructed and operated substantially as and for the purposes set forth.

Third, the grooved pulleys G and I, in combination with the round belts connected therewith, for the purpose of holding the bristles while being combed.

Fourth, the elbow levers D and L, with the weights thereon, as described, for the purposes specified.

Fifth, driving the grooved pulleys G S T and I, direct by means of the bevelled gears, upright shaft, and worm pinion from the driving shaft Y.

Sixth, the small pulley K′, and plates *k*, constructed and operated substantially as and for the purpose set forth.

Seventh, the weight *i′*, in combination with the cranks, shaft and combs, for the purpose of balancing the weight of said combs and cranks.

Eighth, the devices herein described, or their equivalents, when combined, arranged and operated substantially as set forth.

No. 54,035.—GEORGE T. SPAULDING, Brodhead, Wis.—*Broom Head.*—April 17, 1866.—The jaws are connected by toggle links to a central nut which is raised and lowered by the rotation of the screw bolt in continuation of the handle, thereby opening and closing the jaws which clamp the brush.

Claim.—A metallic broom head furnished with the nut and toggle joint, the jaws being operated as described by a screw shank, substantially as set forth.

No. 54,036.—N. F. STONE, Chicago, Ill.— *Cutter Grinder.*—April 17, 1866.—The cutter is temporarily journalled in a handle whose fulcrum is a roller resting on the periphery of the grindstone; a spring restrains the rotation of the cutter in one direction.

Claim.—First, the employment of a spring D, or its equivalent, arranged so as to hold the cutter-shaft and prevent its rotation except in one direction, substantially as described.

Second, the combination of the handle A, guide H, and spring D, constructed and operating substantially as described.

No. 54,037.—N. F. STONE, Chicago, Ill.—*Tool for Upsetting Saw Teeth.*—April 17, 1866.—Two steel wedges are socketed in a stock, their faces adapted to form the edges of the tooth; the tool is driven upon the tooth, upsetting and displaying it to widen its kerf.

Claim.—A tool for upsetting the teeth of circular saws, formed by combining and arranging the pieces B and C, constructed as described with the stock A, substantially as and for the purpose set forth.

No. 54,038.—THOMAS L. STURTEVANT, Boston, Mass.—*Priming Metallic Cartridges.*—April 17, 1866.—A chamber in the base of the cartridge receives a cap which is exploded by a blow from the outside against an inner anvil pin, or by an exploding pin laterally introduced.

Claim.—The combination of the percussion cap discharger C with the cartridge or charger A, as made with the percussion cap receiving chamber *a a*, to extend into the cartridge from its external surface and communicate with the charge receiving space of the cartridge, substantially as specified.

No. 54,039.—SAMUEL SWARTZ, Buffalo, N. Y.—*Device for Removing Stoppers from Oyster Kegs.*—April 17, 1866.—The gimlet screw is jointed in the end of the lever.

Claim.—The screw D, in combination with the bar or lever A and fulcrum B, connected by the joint O, all for the purposes and substantially as herein set forth.

No. 54,040.—THOMAS SYMONDS, Portland, Me.—*Wrench.*—April 17, 1866.—Of the opposite jaws one is adapted to grasp the nut by its angles and the other by its sides.

Claim.—Making a wrench double jawed and so arranged that a nut can be embraced in either of the two described positions without change in the position of the jaws, in the manner set forth.

No. 54,041.—ASA SCOTT, Tiffany, Iowa, and ALBERT LUCIEN WILSON, Rock Island county, Ill.—*Apparatus for the Manufacture of Vinegar.*—April 17, 1866.—The spirit which enters by the central tube and the water which percolates through the charcoal are received upon the concave bottom of the upper vessel and unitedly pass to the lower receptacle.

Claim.—First, the different parts in combination of a condenser for the purpose of condensing and precipitating and saving the alcohol or spirits or other valuable material contained in the vapors arising and otherwise escaping in the manufacturing of vinegar or rectifying of spirits.

Second, feeding the water and spirits separate, by which the water is made to condense the alcoholic vapors, whether these vapors arise from cider, malt, or distilled spirits.

Third, feeding the alcoholic feed through a tube from a tight can, the air having to ascend through the same tube that the feed descends, preventing any escape of vapors in that quarter or connection.

Fourth, the manner in which the tube H is constructed, with an observation glass and connected with the faucet G, cutting off escape of stock in the vapors otherwise lost.

Fifth, the coating of generator and condenser with a composition of rosin, beeswax, oleine, and stearine, in such proportion that it will not crack with cold or run with any amount of heat to which it may be necessarily exposed, thus cutting off evaporation or loss through the wood of which the sides of the condenser or generator for vinegar is made.

No. 54,042.—ALVAH UPSON, Randolph, Ohio.—*Corn Planter.*—April 17, 1866.—The frame has a furrower, a seed box, and a dropping slide followed by a roller; the slide is operated by a pin on the roller which trips a lever.

Claim.—The cutter C′, spout D and slide I, in combination with the spring *e*, cord *d*, lever *b*, and roller C, arranged and operating in the manner and for the purposes set forth, constituting a self dropper.

No. 54,043.—A. H. VAN GIESON, Newark, N. J.—*Leather-splitting Machine.*—April 17, 1866.—The long straight knife has a reciprocating motion, cutting the leather which is drawn through by rollers; gauges and yielding rollers confer adjustability, and sharpening devices keep the knife in order.

Claim.—First, the combination of the wheels S and T with the knife B, the whole being constructed and operated substantially as herein set forth.

Second, the combination of the elastic roller 27 and roller 28, geared together as described with the sectional roller 29, constructed and operating substantially as herein set forth.

Third, the combination of the elastic roller 27 and roller 28, constructed as described with the knife B, as herein set forth.

Fourth, the combination of the knife B, constructed and operating as described, with the devices for stopping the leather at the instant the motion of the knife changes, substantially as herein set forth.

Fifth, the combination of the knife B and rollers 27 and 28, or their equivalents, with the sectional gauge formed by the lower ends of the sections 15 15, substantially as and for the purpose set forth.

No. 54,044.—EDWARD L. WALKER, Benford's Store, Penn.—*Horse Hay Fork.*—April 17, 1866.—The plunger which operates the divergent finger slides in the grooved rod and is reciprocated by a lever and link which form a toggle.

Claim.—The grooved rod A, head C, finger D, sliding rod E, and lever F, substantially arranged as and for the purpose specified.

No. 54,045.—OWEN G. WARREN, New York, N. Y.—*Quartz Comminuter.*—April 17, 1866.—A planetary system of rollers on a horizontal shaft revolving in the semi-cylindrical bed of a tank.

Claim.—The horse frame, carrying crushing rollers C within a tank, in the manner substantially as above described and for the purposes set forth.

No. 54,046.—WILLIAM J. WELLS, Delaware, Ohio.—*Sawing Machine.*—April 17, 1866.—The circular saw attached to the swinging frame is raised after its effective stroke by the devices described.

Claim.—The arrangement of the shaft K, pulley L, clutch M, rope G, and weight I, as and for the purposes specified.

No. 54,047.—J. BURNS WEST, Lakeville, N. Y.—*Wood Turning Lathe.*—April 17, 1866.—The hollow-tapered chuck has internal pivoted cutters, expanded and contracted by a sliding ring whose longitudinal position is governed by a pattern cam and lever.

Claim.—First, the cone-shaped hollow chuck combined with the expanding cutters, constructed, arranged, and operating substantially as and for the purpose described.

Second, the combination of the pattern cam, cone chuck, bifurcated lever N, and sliding ring, substantially in the manner and for the purpose described.

Third, the combination of the chuck, the pattern cam, feed wheels, brackets, and hammer, arranged and operating substantially as and for the purpose described.

No. 54,048 —ELON WHITE and JAMES H. WARREN, French Corral, Cal.—*Gripe Band.*—April 17, 1866.—Hooks are fastened to the ends of the bands, and being overlapped on the pipe and hose a tightening wedge is driven in, its edges bearing against the respective hooks.

Claim.—The curved clasp C, as fastened by the hinge D together with the hook B and curved metallic wedge K, in combination with the band A, substantially as described and for the purpose specified and set forth.

No. 54,049.—WILLIAM H. WHITE, West River, Md.—*Hats and Caps.*—April 17, 1866.—The wire frame is sprung within a flexible cover which is brought into form by draw-strings.

Claim.—First, the manufacture of hats, caps, and other articles of head-dress, substantially as herein shown and described.

Second, the combination of a flexible skeleton frame, substantially such as illustrated by Figs. 1 2 and 3, with a wrapper provided with draw cases and strings, substantially in the manner and for the purpose set forth.

No. 54,050.—C. W. WILLIS and A. STEPHENSON, Cambridge City, Ind.—*Horse Hay Fork.*—April 17, 1866.—The wheels upon the fork-head enable it to clear beams, &c., with which it may come in contact in the act of hoisting.

Claim.—The wheels B applied to the fork-heads, substantially as and for the purpose set forth.

No. 54,051.—JOSEPH P. WOODBURY, Boston, Mass.—*Locomotive Car Truck.*—April 17, 1866.—Explained by the claim.

Claim.—First, the construction and support of the circular platform I, Fig. 1, of the engine truck to the truck frame, by means of the four flexible and compressible hangers G, Figs. 4 and 6, substantially as described and for the purpose set forth.

Second, the construction of the flexible and compressible hangers shown in detail in Fig. 6, substantially as described and for the purpose set forth.

Third, the devices used in adjusting and hanging the crank shaft N, Figs. 1 and 1′, substantially as described and for the purpose set forth.

Fourth, the combination and arrangement of the hangers G, the swinging bar J, the truck frame B, and the circular platform M, of the rear truck, Figs. 7, 8, and 9, substantially as described and for the purpose set forth.

Fifth, the combination of the grooved rollers *i i* and circular iron track *w″*, Fig. 10, substantially as described and for the purpose set forth.

Sixth, the combination of the ventilating pipes *w w*, Figs. 1 and 2, with the engine room and passenger part of the car, for the purpose of conducting the cool and fresh air from the front end of the car through the heated space of the engine room to the passenger end of the car, substantially as described and for the purpose set forth.

No. 54,052.—JOSEPH YATES, Mott Haven, N. Y.—*Preparing Peat and Feeding it to Furnaces.*—April 17, 1866.—The water is partially expressed by the screw which delivers it to the rollers; from thence it drops on to a revolving disk which delivers it to the furnace.

Claim.—The preparing of peat for fuel, and the feeding or supplying the same simultaneously to furnaces, by means of pressure produced by rollers and a screw, or equivalent means, applied directly to the furnace, and arranged to operate in the manner substantially as set forth.

Also, the scattering or distributing of the compressed peat over the fire in a shower of thin flakes, in the manner substantially as set forth.

No. 54,053.—ALANSON BINGHAM, Keene, N. H., and OSMORE A. BINGHAM, Gardiner, Mass., assignors to themselves and DANIEL W. WILLOBY, Fitchburg, Mass.—*Construction of Chairs.*—April 17, 1866.—The rectangular frame, forming with its splints the detachable chair seat, is formed by fitting and clamping its angles, which are adapted to set upon the legs, within mortises in their upper ends.

Claim.—The frame of the seat of a chair composed of pieces A B, the ends of which are united and formed substantially as described, in combination with the posts C, each of which is provided with one or more gains or mortises, substantially as and for the purpose set forth.

Also, the seat of a chair composed of the frame A B, covered with a single thickness of flag or strips of oak or ash, substantially as and for the purpose described.

No. 54,054.—JOHN S. BULLARD, Chagrin Falls, Ohio, assignor to C. BULLARD & SONS, same place.—*Butter Moulds.*—April 17, 1866.—The moulds are made of shell-shape, of uniform size, by a two-bladed tool.

Claim.—The described butter mould, when constructed in the mode or manner set forth, as an improved article of manufacture.

No. 54,055.—GEORGE W. CHEESMAN and CHARLES DURAND, Ansonia, Conn., assignors to J. W. OSBORNE and G. W. CHEESMAN, same place.—*Clasps for Skirt Hoop.*—April 17, 1866.—The end lips are flattened upon the single thicknesses of wire, and prevent the motion of the wire ends in the direction of their length when they are enclosed in the folded clasp.

Claim.—First, the combination in clasps for skirt hoops of lips C at their ends with notches B, at the ends of the flanges of the clasps, substantially as shown.

Second, concealing the extremities of the overlapped parts of a skirt hoop, by means of the curtain F, on the outer side of the clasp, substantially as described.

No. 54,056.—N. H. CHESEBROUGH, New York, N. Y., assignor to T. G. VAN COTT, same place.—*Dyspepsia Cure.*—April 17, 1866.—Equal parts of aloes, rhubarb, gentian root, and coriander seeds, digested in a mixture of equal portions of brandy and water.

Claim.—The compound formed of the ingredients and for the purpose specified.

No. 54,057.—JOHN C. CLIME, Philadelphia, Penn., assignor to himself and E. POTTS, same place.—*Steam Engine Governor.*—April 17, 1866.—The elbows of the ball arms are connected by a spring, whose mid-length is attached to a sleeve which slips on the spindle as the balls rise. The duty of the spring is to assist in restoring them to their normal position.

Claim.—The within described governor, composed of a spindle A, sleeve C, weighted arms B B′, and spring D, the whole being constructed and arranged for joint action, as and for the purpose herein set forth.

No. 54,058.—RICHARD COLLINS, Chicopee, Mass., assignor to himself, GILBERT A. SMITH, and JOHN T. ROCKWOOD, same place.—*Harness Motion for Looms.*—April 17, 1866.—The harness is stationary while the shuttle is thrown, and its movement is varied by the adjustment of the slotted cam on its axis. The cam has six curves but the same diameter at all points, and reciprocates the yoke which by rack and pinion moves the harness.

Claim.—The described devices for operating the harness, the same consisting of the peculiar-shaped cam A, slotted as described, frame B, rack *f*, and pinion *g*, the whole being used to operate and in combination with the harnesses C D, in the manner herein set forth.

No. 54,059.—ERNST CONRAD, Philadelphia, Penn., assignor to himself and H. COULTER, same place —*Lantern.*—April 17, 1866.—The light chamber is surrounded by panes of glass whose lower edges rest in a circular groove, their upper being sustained by a strip. A funnel-shaped cover, perforated dome, and foot flange afford channels for circulation of air.

Claim.—First, the combination of the frame with its glass plates, strip or band *c*, cover D, and perforated plate *d*.

Second, the arrangement substantially as described of the funnel-like cover D and hollow perforated sphere E.

No. 54,060.—WILLIAM CORFIELD, Philadelphia, Penn., assignor to himself and J. A. DOUGHERTY & SONS, same place.—*Manufacture of Burning Fluid.*—April 17, 1866.—The exit pipe of a still conducts the vapor through a bath of turpentine.

Claim.—Causing the alcoholic vapors from a still to pass through spirits of turpentine or to unite with the vapors of the same, substantially in the manner and for the purpose described.

No. 54,061.—WILLIAM CORFIELD, Philadelphia, Penn., assignor to himself and J. A. DOUGHERTY & SONS, same place.—*Manufacture of Burning Fluid.*—April 17, 1866.—Distil a mixture of grain spirit and spirits of turpentine, and re-distil the condensed product of the first distillation.

Claim.—Mixing spirits of turpentine with fermented preparations of grain or other materials used in the manufacture of alcohol, and distilling the mixture, substantially in the manner and for the purpose herein set forth.

No. 54,062.—GEORGE S. CURTIS and THOMAS TRIPP, Chicago, Ill., assignors to themselves, E. G. L. FAXON, and HENRY S. DODGE, same place.—*Amalgamator.*—April 17, 1866.—The horizontal screw conveys the ore from the vertical feed pipe to the amalgamating vessel. The deflector prevents the adherence of the ore to the vessel.

Claim.—The combination of the vertical feed pipe E and the horizontal conveyer B C with the amalgamating vessel A, arranged and operating substantially as and for the purposes shown and described.

Also, in combination with the amalgamator A and conveyer B C, the arrangement of the diaphragm or dispenser F, substantially in the manner and for the purposes described and shown.

No. 54,063.—ROBERT W. DAVIS, Flushing, N. Y., and DANIEL DAVIS, Long Island City, N. Y., assignors to themselves and JOHN H. LIVINGSTON, Long Island City, N. Y.—*Steam Generator.*—April 17, 1866.—The parts are arranged vertically and concentrically as follows: A coal reservoir, a water jacket, a series of reverberating gas chambers with corrugated shirts, a spiral flue space, and an encircling water jacket. The furnace is base burning, and the gases in the fuel chamber are forced down by a steam jet.

Claim.—First, in combination with the upright, inner cylinder and surrounding upright water jacket, the spiral partitions dividing the annular space between such cylinder and water jacket into spiral flues, substantially as herein described.

Second, the arrangement of the gas mixing chambers J J, in relation with the cylinder A, the central fuel supplying reservoir L, and the grate G, substantially as and for the purpose herein specified.

Third, the elastic, corrugated shirts *j j*, in combination with the gas-mixing chambers J J, substantially as and for the purpose herein specified.

Fourth, in combination with a fuel-supplying reservoir, so arranged in relation to the fire grate or furnace and chimney of a steam boiler that any draught in the said reservoir will be in a downward direction, a pipe or nozzle, arranged to conduct steam from the boiler into the upper part of the said reservoir, substantially as herein specified.

No. 54,064.—Robert W. Davis, Flushing, N. Y., and Daniel Davis, Long Island City, N. Y., assignors to themselves and John H. Livingston, Long Island City, N. Y.—*Furnace Grate.*—April 17, 1866.—The circular grate for the base burning furnace is supported and is adjustable vertically upon a central vertical screw.

Claim.—First, the grate G, constructed and applied to a boiler or other furnace, or to a stove, substantially as and for the purpose herein set forth.

Second, supporting the grate of a boiler or other furnace, or of a stove, upon a vertical screw, substantially as and for the purpose specified.

No. 54,065.—J. B. Doolittle, New Haven, Conn., assignor to himself and George O. Downing, Hamden, Conn.—*Revolving Fire-arm.*—April 17, 1866.—A stationary jacket attached to the frame covers the rear portion of the revolving cylinder, which is cut away to about the mid-length of the chambers. A yoke, having a reciprocating motion from the action of the hammer, completes the chamber for firing. The cylinder is removed for loading.

Claim.—First, the combination of a cylinder constructed with chambers complete for a portion of their length, and but half chambers at the rear or remaining portion with the yoke I, constructed and arranged so as to complete the chamber in line with the barrel, as and for the purpose specified.

Second, the combination of the lever *h* with the yoke I and hammer, substantially as and for the purpose set forth.

Third, the combination of the latch *d* with the barrel, when constructed and arranged so that the cartridge within the cylinder operates to lock the barrel in position, substantially as described

No. 54,066.—Samuel Estes, Newburyport, Mass., assignor to C. Osgood Morse and Hiram Littlefield, same place.—*Let-off for Looms.*—April 17, 1866.—The amount of let-off at each movement of the lay is governed by the force with which the batten meets the fabric; the blow being proportioned to the density of the fabric.

Claim.—The arrangement of the rock-shaft C, arm E, spring rod F, lever G, spring *f*, batten H, pawls *g h*, and ratchet wheel *i*, constructed and operating in the manner and for the purpose herein described.

Also, the adjustable sleeve *e*, in combination with the spring rod F, lever G, spring *f*, batten H, pawls *g h*, and ratchet wheel *i*, arranged and operating as herein described.

No. 54,067.—Jim B. Fuller, Norwich, Conn., assignor to himself, James P. Upham, Claremont, N. H., and Edwin T. Rice, New York, N. Y.—*Spinning Machine Roller.*—April 17, 1866.—The intermediate drawing roller has circumferential or spiral grooves to present edges and open spaces to the lower longitudinally grooved roller; this permits the long fibres to be drawn through these spaces by the front drawing rollers, while the main body of the sliver is held back, preventing any fabrics being carried forward faster than the motion of the middle rollers, until they are caught by the front rollers.

Claim.—A roller constructed and operating substantially as and for the purposes herein specified.

No. 54,068.—Joshua Gray, Medford, Mass., assignor to himself, S. S. Bucklin, and W. G. Langdon, same place.—*Magazine Fire-arm.*—April 17, 1866.—The breech block is drawn backward and downward by a peculiar combination of breech block, spring tumbler, link, and trigger-guard lever; an independent carrier arm simultaneously transfers a cartridge from the magazine tube beneath the barrel, and presents it to be pressed into the chamber by the returning breech block.

Claim.—First, the shape, arrangement and operation of guard lever *a*, tumbling block B, and breech block C, and their combination with pivot pin *p*, and spring *s*, substantially as and for the purpose described.

Second, the arrangement of the relieving finger F and its tang *g*, in combination with the breech block C, substantially as and for the purpose described.

Third, the arrangement of magazine stop *y*, in combination with the magazine and cartridge lifter, constructed and operating substantially as described.

No. 54,069.—D. Frank Hartford, Boston, Mass., assignor to himself and Edmund Tarbell, same place.—*Drill Stock.*—April 17, 1866.—The reciprocation of the swiveled flange of the nut in the reversed series of spiral grooves in the stem, moves the drill in a uniform direction.

Claim.—The combination of the direct and reverse helical grooves *f f' g g'*, as arranged, with inclined planes *s* at *f' g'* and *h*, with the chuck B and its pins *b c c'*, all constructed and operating substantially as described.

No. 54,070.—Joel H. Palmer, Greenbush, N. Y., assignor to himself and Clark H. Brown, same place.—*Lubricating Oil Cup.*—April 17, 1866.—The oil passes through the valved opening at the bottom of the bowl, and from the chamber by the passage-way in which the metal bar reciprocates.

Claim.—The method of regulating the flow of oil by means of a metal bar, or its equivalent, arranged to slide back and forth with an oil cup over the passage-way of the oil, from the cup to the part to be lubricated, without uncovering the passage itself, substantially as described in the above specification.

No. 54,071.—CHARLES ROBITAILLE, Brooklyn, N. Y., assignor to FLORIAN DAHIS and HENRY B. VOSS, same place.—*Button.*—April 17, 1866.—The button has a tubular stem; the washer in the rear has a serrated face, and a notched plug which enters the tubular stem and is secured therein by a spring catch.

Claim.—The spring *f* in the folded or triangular form shown, in combination with the projection in which is the hole *e*, for the purposes and as specified.

Also, the notch *c* in a triangular shape, with a portion of the side of the perforator removed, (as at *c'*,) for the purposes and as specified.

Also, the teeth around the edge of the head *a* of the perforator *b*, as and for the purposes specified.

No. 54,072.—WILLIAM S. SAMPSON, New York, N. Y., assignor to himself and THEODORE BOURNE, same place.—*Grain Meter.*—April 17, 1866; antedated April 10, 1866.—The space between the disks is partitioned by radial divisions into receptacles for grain as it falls from the hopper; the spaces are successively presented for filling and discharging by the revolution of the shaft.

Claim.—First, in combination with a meter wheel B, the cam wheel B^5 B^6, and the weighted lever C, adapted to operate substantially in the manner and for the purpose herein set forth.

Second, the adjustable weight D, in combination with the lever C, wheel C', cam wheel B^5 B^6, and the meter wheel B, all substantially as and for the purpose herein set forth.

Third, the tilting lever or latch G G^1 G^2, in combination with the projections b' b^2, or their equivalents, and arranged to operate substantially as and for the purpose herein set forth.

Fourth, the hinged edges B^2 on the wings or partitions of a meter wheel, constructed and arranged to operate in connection with a suitable striker, substantially as and for the purpose herein specified.

Fifth, the double bevelled stop or striker E^2, arranged in combination with the meter wheel B so as to "strike" the substance measured, in the manner substantially as herein specified.

Sixth, the apron A' having a width a little greater than the space between the wings of the meter wheel, and arranged substantially in the manner and for the purpose herein specified.

No. 54,073.—GEORGE SEWELL, Poughkeepsie, N. Y., assignor to AMERICAN TOOL AND MACHINE COMPANY, New York, N. Y.—*Salinometer Pot.*—April 17, 1866.—The water entering at the induction pipe is received in the outer chamber, and thence passes downward and around the lower edge of the inner chamber, designed to prevent a scalding jet flying out at the top.

Claim.—The secondary chamber C, which is open at the bottom, in combination with the main chamber B and induction pipe *a* of a salinometer pot A, connected and operating substantially as and for the purpose set forth.

No. 54,074.—THOMAS TRIPP, Chicago, Ill., assignor to himself, GEORGE S. CURTIS, E. G. L. FAXON, same place, and HENRY S. DODGE, Milwaukee, Wis.—*Amalgamator.*—April 17, 1866.—A central stationary cylinder is jacketed in an outer revolving cylinder, whose projecting tubular orifices disseminate the ore at the bottom of the lead bath.

Claim.—First, the arrangement of a stationary cylinder or tube B within a revolving cylinder E, substantially as and for the purposes specified.

Second, in combination with the above, the employment of one or more tubes M, arranged substantially as and for the purposes described.

Third, the arrangement of the stationary plate *c* beneath the discharge pipes M, for the purpose of preventing a rotating motion of the ores below the tube or cylinder B, substantially as herein shown.

No. 54,075.—THOMAS TRIPP and GEORGE S. CURTIS, Chicago, Ill., assignors to themselves, E. G. L. FAXON, same place, and HENRY S. DODGE, Milwaukee, Wis.—*Amalgamator.*—April 17, 1866.—A revolving shaft, with spiral blades at its lower end, distributes the ore at the bottom of the lead bath.

Claim.—The combination of the vertical tube B with the revolving agitator or disperser H, arranged and operating substantially as herein set forth and shown.

No. 54,076.—THOMAS TRIPP and GEORGE S. CURTIS, Chicago, Ill., assignors to themselves, ELLIS G. L. FAXON, same place, and HENRY S. DODGE, Milwaukee, Wis.—*Amalgamator.*—April 17, 1866.—The ore is conducted to and disseminated at the bottom of a lead bath, by means of a revolving tube with a cylindrical bottom and openings for the escape of the ore. A hammer keeps the ore from choking the passage.

Claim.—First, the hollow shaft C, provided with the opening P, and the drum B provided

with the aperture O, when the opening P and aperture O are connected by a tube arranged within said drum, and all are combined and operated substantially as herein shown and described.

Second, the hammer H when operated upon the shaft C, for the purpose described.

No. 54,077.—STEPHEN W. WOODWARD, Buffalo, N. Y., assignor to himself and S. HUME, same place.—*Window Blind Operator.*—April 17, 1866.—An arm on the blind projects beyond the axis of the hinges; to it is attached a rod which passes through the window casing and is the means of vibrating the blind on its hinges; notches on the rod maintain it in position by engagement with a plate.

Claim.—The combination of the notched rod E F, lock plate *g'*, arm D and button *h*, constructed, arranged and attached to the window frame and blind, substantially as set forth.

No. 54,078.—WILLIAM BOWMAN, Greenock, Scotland.—*Boiler Feeder.*—April 17, 1866.—Explained by the claim.

Claim.—The combination and arrangement of the specific devices herein set forth for feeding steam boilers, which continues to operate by the direct action of the steam, as long as the water is below the proper level, but ceases to operate as soon as the water is high enough, substantially as described.

Second, the combination and arrangement of the floats K and I, operating the valves C and D, by means of the levers G and E, substantially as described.

Third, an inductor, in which the upper float K, rising, opens the induction steam valve and closes the exhaust valve, and the falling of the bottom float I reverses the movement, substantially as herein set forth.

No. 54,079.—FIDELE CHATELAIN, Lille, France.—*Rotary Engine.*—April 17, 1866.—Two stationary cams operate the sliding pistons of the revolving cylinder, pressing alternately upon their outer and inner ends.

Claim.—The arrangement in rotary steam engines, constructed as described, of the two cams, with reference to the sliding pistons, and the revolving cylinder, for operation, as herein shown and set forth.

No. 54,080.—GEORGE CLARK, London, England.—*Envelope for Bottles and Jars.*—April 17, 1865.—The straw is held by a cross-barred frame with attached elastic strips, to aid in securing the ends without displacing the straw.

Claim.—First, envelopes or wrappers made from mats of fibrous material, formed by cutting such fibrous material into any required lengths, and holding the same in a rigid state, in the form of layers or pads preparatory to and whilst being permanently fastened together laterally.

Second, the apparatus above described, to carry out said invention.

No. 54,081.—J. ANTOINE PASTORELLI, Marseilles, France.—*Extracting Turpentine from Wood.*—April 17, 1866.—The wood is heated by steam in a cylinder.

Claim.—The distillation of resinous woods for the extraction therefrom of the essence of turpentine, &c., by the means and in the manner herein set forth, that is to say, by placing the wood in the boiler, over an ordinary fire, together with water to form steam, to prevent the burning of turpentine, formed as above described and for the purposes set forth.

No. 54,082.—N. C. SZERELMEY, Pimlico, England.—*Manufacture of Paper Boards and Pipes.*—April 17, 1866.—Sheets of paper, saturated with chloride of calcium and acetate of lime, are cemented by a composition of coal tar, French siccatif, "zopissa," paper pulp and glue.

Claim.—The manufacture of paper boards and paper pipes, by combining suitable paper in layers, by means of a composition or cement, consisting of tar, French siccatif, "zopissa," and glue, substantially as herein described.

No. 54,083.—FREDERICK PELHAM WARREN, East Court, Cosham, Great Britain.—*Sheathing for Iron Vessels.*—April 17, 1866; English patent May 21, 1863.—The iron plate and copper sheathing are roughened, covered with water-proof glue, and a strip of insulating material interposed between them; the upper edge is clamped by a strip fastened to the hull.

Claim.—First, the combination, with the iron plates, of a vessel having serrated outer surfaces of a metal sheathing *d*, having a serrated inner surface, and an intermediate layer of insulating material, substantially as and for the purpose set forth.

Second, a band or rib *k*, constructed and applied to the upper edge of the sheathing, substantially as described.

No. 54,084.—GEORGE RACE, Norwich, N. Y.—*Hay Loader.*—April 17, 1866.—The fork handle is attached by cords near each end to a second lever suspended from the end of the swinging arm.

Claim.—First, in combination with the arm C, the lever D and pitchfork E, suspended substantially in the manner and used for the purpose set forth

Second, so suspending the fork E, when used in combination with the lever D, that by means of a freely revolving arm C, the load upon the fork may be carried to any required point within the sweep of the arm, substantially in the manner set forth.

No. 54,085.—C. F. ALLEN, Aurora, Ill.—*Car Truck.*—April 24, 1866.—The transverse beams of the truck frame embrace at their ends boxes upon which the pillow blocks are imposed and the stay straps secured.

Claim.—First, the employment of metal boxes *b b*, between the ends of the transverse beams A A of the truck, said boxes being so constructed and applied that they form metallic bearings or abutments for the metallic blocks C C, and the lower strap or brace D, substantially as described.

Second, the combination of the straps D D′ D^2, the posts *c c*, the pillow blocks C C, and the box *b*, constructed substantially as described with the wooden cross-beams A A, the whole being bolted together, substantially as described.

Third, the construction and arrangement of the plates *x x z z*, blocks *p p*, and straps *n n*, in combination with the beams A A B, substantially as and for the purpose described.

No. 54,086.—E. G. ALLEN, Boston, Mass.—*Railway Frog.*—April 24, 1866.—The base plate is curved and resilient material placed between it and the frog. The chair is similarly furnished with a yielding base.

Claim.—First, a railroad frog, made elastic by the combination of the curved plate A, and elastic substance *c*, with the frog plate C, substantially as and for the purpose specified.

Second, the combination of the independent elastic chair N with the frog plate C, also made elastic, substantially as and for the purpose described.

No. 54,087.—GEORGE P. ALLEN, Woodbury, Conn.—*Weeding Hoe.*—April 24, 1866.—Both edges of the plate are serrated to make it effective in either direction. The pins on the blade act as rake teeth.

Claim.—First, the cutter blade A, constructed substantially as described.

Second, the pins *b*, in the cutters A, which, with the uprights B, give to the implement the advantages of a common rake.

Third, the combination of the cutter blade A, pins *b*, uprights B, as described, and handle *c*, arranged and operating in the manner and for the purpose herein specified.

No. 54,088.—EDWARD H. ASHCROFT, Lynn, Mass.—*Machine for Preparing Peat.*—April 24, 1866.—The peat is pressed through a series of compressing and drying devices consisting of rolls; centrifugal dryers in foraminous cases; conveyer tubes in a furnace, and a delivery piston which discharges it through perforated tubes.

Claim.—The mode, substantially as above described, of treating or preparing peat, the same consisting in breaking it up and discharging water from it by one or more centrifugal machines or the same and a set of squeeze rollers, and subsequently passing it through a drying apparatus, and from thence into and through a compressing apparatus, whereby it may be compressed into such shape or shapes as may be required.

Also, the combination of the feed rollers, one or more centrifugal machines, as described, a set of squeeze rollers and a drying apparatus, the whole being to operate substantially as and for the purpose specified.

Also, the combination of the feed rollers, one or more centrifugal machines, as described, a set of squeeze rollers, a drying apparatus, and a compressing mechanism or apparatus, the whole being substantially as and for the purpose hereinbefore specified.

Also, the compressing apparatus, made substantially in manner and so as to operate as described.

Also, the drying apparatus as made, substantially in the manner and so as to operate as described.

Also, the centrifugal machine, composed of the toothed cylinder, or its equivalent, and the foraminous case arranged and applied together, substantially in manner and so as to operate as specified.

Also, the use of perforated tubes P in drying cylinder O, to assist in absorption of moisture of peat in said tubes by temperature of surrounding steam.

No. 54,089.—C. ATWOOD, Lebanon, Ill.—*Gang Plough.*—April 24, 1866.—The frame and beams are laterally adjustable in the metallic front plate: the plough frame is adjusted vertically, and the standards are braced by rear supports and set screws at the rear ends of the beams.

Claim.—First, forming the forward connection between the beams of the frame A^2 of a metal plate C, having slots *a′* in it for the passage of the attaching devices *a* and a^2, so that the machine may be readily adjusted to any width.

Second, the adjustable tie or brace rods D, or their equivalents, when used as and for the purpose set forth.

Third, the combination of the shaft E, levers E′ and E^2, hook rod F and cross-bar G, or

their equivalent devices, with the plough beams of gang ploughs, for the purpose herein set forth.

Fourth, the combination of the strap piece *c* and set screw *c'*, with the beam H and with the braces H^3, as and for the purpose set forth.

No. 54,090.—GEORGE H. BABCOCK and STEPHEN WILCOX, Jr., Providence, R. I.—*Cut-off Valve.*—April 24, 1866.—The cut-off valves are operated through an auxiliary cylinder and piston by the steam itself, independently of the main valve mechanism. The point of cut-off is variable for any point in the stroke of the main piston, determined automatically by the regulator.

Claim.—First, an auxiliary piston and cylinder to operate the cut-off of a steam engine, to which auxiliary cylinder the admission of steam can be regulated in point of time to correspond with any desired point in the stroke of the piston in the main cylinder, substantially as described.

Second, combining with the main valve or valves an auxiliary piston and cylinder to operate the cut-off when arranged to travel with the valve, but to work independently of it, substantially as described.

Third, the intermediate toothed pinion *k'*, or its equivalent, connecting the valve gear which controls the cut-off, with the moving member of the engine which actuates such valve gear when the same is arranged to alter the relation of such valve gear to its moving force, without breaking the connection between the two, substantially as herein described.

Fourth, the combination, substantially as described, of a regulator with a cut-off valve gear of the character, and possessing the qualities, herein specified.

Fifth, the combination of the contracted orifice *o*, Fig. 5, with a pocket *h*, formed by the port of the auxiliary valve E, substantially as described for the purpose specified.

No. 54,091.—JOHANN CONRAD BAER, Cincinnati, Ohio.—*Beer Faucet.*—April 24, 1866.—The beer is frothed by a piston which discharges the contents of the cylinder through a perforated bottom; the plunger is linked to the key of the spigot to open and close it.

Claim.—The arrangement of body A, plug chamber B, plug C, frothing chamber D, plunger E *e e'*, and rods G G', substantially as and for the purposes set forth.

No. 54,092.—THOMAS K. BAILEY, Lockport, N. Y.—*Churn.*—April 24, 1866.—The dasher is formed of one circular and two annular disks; the former is attached to the end of the shaft; the upper annular disk is connected by a cross-bar to the shaft and by sliding posts to the lower disk, whose orifice is closed by the descending plunger, causing the cream to ascend around its margin.

Claim.—An improved churn dasher, constructed and arranged substantially as herein described and for the purposes set forth.

No. 54,093.—HAYDEN M. BAKER, Rochester, N. Y., assignor to himself, ALBERT M. HASTINGS and ALEXANDER MCVEAN.—*Process for Recovering Waste Alkali.*—April 24, 1866.—Evaporate the waste liquor; heat the viscid result with 10 per cent. its weight of quicklime in a retort. The volatile results—pyroligneous acid, ammonia, wood tar, &c.—are condensed; the retort contains the caustic alkali, carbonate of lime, and earthy salts.

Claim.—The recovery of the alkali (used in the preparation of paper stock) in its caustic state, by transmitted caloric, and the utilization of the vegetable matter upon the principles of destructive distillation, thereby forming useful products, such as are usual in the destructive distillation of wood and coal, in the manner herein described and set forth, or any other process, substantially the same, which produces the same intended results or effects herein described.

No. 54,094.—SARAH J. BAKER, Chicago, Ill.—*Stocking-heel Protector.*—April 24, 1866.—A cap for the heel, supported by straps over the instep.

Claim.—A stocking-heel protector, constructed substantially as herein described, and for the purposes specified.

No. 54,095.—L. M. BATES, Newark, Ohio.—*Plough.*—April 24, 1866.—Explained by the claim.

Claim.—The detachable point C, attached and secured to the ploughshare by a shank, having a dovetail section, substantially as and for the purpose specified.

No. 54,096.—BENJAMIN F. BEE, Harwich, Mass.—*Screw Tap.*—April 24, 1866.—The radius of the tap at the cutting points is greatest, and the projection has a receding back surface to give room for clearance.

Claim.—As an improved article of manufacture, the screw tap, made as herein shown and described, substantially in the manner and for the purpose set forth.

No. 54,097.—THOMAS BELL, New York, N. Y.—*Medicine for the Cure of Consumption, &c.*—April 24, 1866.—Decoction of marsh mallow, honey, sugar, and whiskey.

Claim.—The sirup composed of althæa officinalis, alcoholic spirit, and sugar, in the proportions and so as to form a permanent compound, having the properties herein set forth.

No. 54,098.—Cyrus Benedict, Jr., Omro, Wis.—*Cough Sirup.*—April 24, 1866.—Decoction of none-such, licorice root, sugar, honey, camphor, myrrh, and cayenne pepper.

Claim.—The compounding and medicating the herein described articles into a cough sirup.

No. 54,099.—Theophilus F. Bertrand and Peter Sames, Rockford, Ill.—*Cultivator.*—April 24, 1866.—The rigid frame is mounted upon wheels and supports the driver, the ploughs, and the operative mechanism.

Claim.—First, the combination of the ploughs, draught rods, and elbow levers O, with the frame and driver's seat, when constructed, arranged, and operating as described.

Second, the combination of the standard, braces, eye-bolt, and grooved block, when constructed and arranged as described, to vary the angle of the plough to the crop, as set forth.

Third, the combination of the standard eye-bolt *j*, loop *m*, and draught rod M, constructed and arranged as described, to secure centre draught when ploughing at an angle to the crop.

No. 54,100.—Charles E. Billings, Windsor, Vt.—*Breech-loading Fire-arm.*—April 24, 1866.—A bolt springs into a notch behind the hammer when the latter is down on the cartridge, and enables it to act as a recoil block.

Claim.—The combination of the brace or bolt *a* and spring *h* with the frame and hammer of the arm, when arranged and operating in the manner and for the purpose herein set forth.

No. 54,101.—Peter S. Bishop, Attleborough, Mass.—*Machinery for Stamping Chain Links.*—April 24, 1866.—The slide feeds the rings from the bottom of a tube to an intaglio die; the cameo die descends; the intaglio recedes by the compression of its supporting springs; the ring adheres to the rising cameo, and is removed therefrom by wipers and a hooked finger.

Claim.—First, combining the carrier F, constructed substantially as described, with the yielding holder plate J, provided with a projection *d'*, or the equivalent thereof, substantially as described, for the purpose specified.

Second, combining such carrier F and yielding holder plate J with a die and former *a b*, for the purpose of transferring the blanks, one by one, to the latter, substantially as herein described.

Third, combining with the hooked finger L a spring-seated die *b*, substantially as described, for the purpose specified.

No. 54,102.—Lewis Bridge and G. W. Ruby, York, Penn.—*Heating Stove.*—April 24, 1866.—The fire chambers are divided by a central space, spanned by connecting pipes; separate or combined flues lead off the volatile results.

Claim.—First, the arrangement above shown of the fire chambers A A separated from each other by a central air chamber K, through which pass connecting flues B B, each chamber having direct escape flues G G, and a common flue H when the direct flues are closed, substantially as described.

Second, the combination of the fire chambers A A, the air channel K C C, air space D, and the drum E, containing a flue space E', divided by partitions L, substantially as described.

No. 54,103.—Henry H. Brown, Washington county, Penn.—*Wool Press.*—April 24, 1866.—The sides of the fleece are folded in by the rising of the side leaves, forming a trough, secured by latching on the head piece; the tail end is then rolled in on the shoulder, and there clamped and tied.

Claim.—The mortised clamping front leaf and spring latch in combination with the folding side and end leaves, substantially in the manner and for the purpose set forth.

No. 54,104.—John Buchanan, Aurora, Ind.—*Broom Head.*—April 24, 1866.—The brush is interlocked in bars and secured by the hooks to the plate; is so arranged as to hide the frame, and is fastened by cord.

Claim.—The combination of the cap or ring A, arms B B, shank S, stem E, the plate G with its hooks *h*, and cord *b* or its equivalent, substantially as and for the purpose specified.

Also, the loops D D, in combination with the cap or ring A, and plate G, with its hooks *h*, constructed and operating substantially as and for the purpose specified.

No. 54,105.—Joseph Burchinall and J. T. Johnson, Kalamazoo, Mich.—*Milk and Cream Refrigerator.*—April 24, 1866.—The milk pan sets in the water trough, each having a distinct lower means of discharge.

Claim.—The combination of the trough A, pan B, perforated pipe D, and nuts F, whose holes register therewith, and operating in the manner and for the purpose specified.

No. 54,106.—Charles Burnham, Philadelphia, Penn.—*Flour Sifter.*—April 24, 1866.—Explained by the claim.

Claim.—The combined flour sifter, scoop, and measurer, constructed in the manner as herein described and shown, to wit: with a rectangular box, grooved or ribbed horizontally internally; with a concave sieve within said box, above the lower edge of the box;

with a handle on one side of the box, and with a combined stirrer and scraper within the box, above the sieve, said stirrer and scraper being formed with rubber strips and wire brushes set tangentially, all in the manner set forth.

No. 54,107.—CHARLES W. CAHOON, Portland, Maine.—*Wave-power Propulsion.*—April 24, 1866.—Two vessels are connected by a lever; their relative changes in position are made to actuate gearing and drive a motor device.

Claim.—Connecting two vessels together by means of a lever or its equivalent, so that the motion of the waves of the sea may cause the lever to act upon machinery, and thereby propel the vessel through the water.

Also, for the purpose, the machinery or its equivalent, substantially as described.

Also, the shaft R in combination with the lever C, or equivalents, for regulating the speed of the vessels, substantially as described.

Also, the levers *b b* in combination with the ratchet rods E E, or equivalents, for disconnecting the wave motor, substantially as described.

Also, the combination of a steam engine or its equivalent with a wave motor, substantially as represented.

No. 54,108.—AUGUSTUS C. CAREY, Malden, Mass.—*Machine-made Knitted Mitten.*—April 24, 1866.—Explained by the claim.

Claim.—As a new article of manufacture, a machine-knit mitten, the thumb of which is first commenced at its tip and knit up to where it is to be joined to the body of the mitten, and there stopped until the body is knit up and joined to said thumb portion, and then both united and knit on in a cylindrical form to the wrist, by means of needles and thread automatically operated by a jacquard pattern, substantially as described.

No. 54,109.—AUGUSTUS C. CAREY, Malden, Mass.—*Machine-made Knitted Stocking.*—April 24, 1866.—Explained by the claim.

Claim.—As a new article of manufacture, a machine-made stocking, the heel of which is knit, turned, or formed by a jacquard connected with the knitting machine and composed of a series of short rows or gussets, alternating with one or more continuous rounds or rings of knit-work, substantially as herein described and represented.

No. 54,110.—ARIEL CASE, New Haven, Conn.—*Stereotype Block.*—April 24, 1866 —The stereotype plate is mounted upon quadrats set up in a chase; the clamps which hold the edges of the plate are inserted among the quadrats.

Claim.—A stereotype block of quadrats, and inserting therein blocks B and F or their equivalents, substantially in the manner and for the purpose herein set forth.

No. 54,111.—ANDREW CHRISTIAN, New York, N. Y.—*Children's Carriage.*—April 24, 1866.—Explained by the claim.

Claim.—The improvement in that class of children's carriages known as "perambulators," herein described, the same consisting in supporting the front end of such carriage upon two in lieu of one wheel, substantially as and for the purpose herein specified.

No. 54,112.—JAMES H. CLAPHAM, New York, N. Y.—*Shaft for Drilling.*—April 24, 1866.—Portions of the periphery are depressed to assist in grasping the pipe, to couple and uncouple.

Claim.—The tubular rod for well drills or pumps, formed with polygonal depressions for the reception of the clamps or wrenches, as specified.

No. 54,113.—EDWARD CLARK, New York, N. Y.—*Bolt-fastening for Boiler Heads.*—April 24, 1866.—The bolt has a tapered head, which binds against the flare in the end of the split sleeve, as the nut is rotated.

Claim.—The method of securing together boiler and other plates by the employment of conical-head bolts in combination with tubes or thimbles, substantially as described.

Also, the conical-head screw-bolt A in combination with split tube D, substantially as described.

No. 54,114.—I. R. CLARK, New York, and S. T. SAVAGE, Albany, N. Y.—*Burner for Gas Stoves.*—April 24, 1866.—The gas from the burner is deflected through the foraminous cover and exudes in an annular jet around the cap.

Claim.—The inverted conical-shaped tube A, perforated upon its side at its upper portion, and capped or closed with a deflector-plate C, in combination with the cylindrical box D, surrounding its perforated portion, and resting upon a flange F, provided with apertures or openings G, when arranged and applied together, substantially as and for the purpose described.

No. 54,115.—RICHARD CLARK, Chicago, Ill.—*Hair-curling Fluid.*—April 24, 1866.—Extract of boxwood, water, alcohol, and perfume.

Claim.—The employment of the extract or tincture, or other decoction of boxwood, substantially as specified and for the purposes set forth.

No. 54,116.—Sarah E. Cook, Philadelphia, Penn.—*Imitation of Braided Human Hair.*—April 24, 1866.—Explained by the claim.

Claim.—A fabric woven at its edges and twisted spirally, in the manner described, so as to produce an imitation of braided human hair.

No. 54,117.—William F. Corpe, Windsor Locks, Conn.—*Fruit Jar.*—April 24, 1866.—The upper lip of the neck is received within an annular recess in the cap; the outer flanges of the neck and cover are embraced by an elastic band.

Claim.—First, the cover with circular groove and plunger *p* and bead *m*, when constructed and used as for the purpose set forth.

Second, the shoulder *c*, lip *d*, recessed cover *f*, projection *h*, beads *m n*, and enclosing band *g*, in combination, when constructed and employed as and for the purposes herein specified.

No. 54,118.—William Crane and Warren H. Pease, Goshen, Ind.—*Solar Mirror for Photographic Purposes.*—April 24, 1866; antedated April 16, 1866.—The plane of the mirror is actuated by clock-work so as to direct the rays to a given point continuously by adjustment on its longitudinal and transverse axes.

Claim.—First, the apparatus, herein described, for directing a line of light from sunrise to sunset, whatever the altitude of the sun may be, made and applied substantially as and for the purpose above set forth.

Second, retarding the speed of the movements of the rock shaft O by means of the travelling nut V and its pin *x*, substantially as herein shown.

No. 54,119.—Peter S. Crawford, Union, Ill.—*Device for Tightening Wire Fence.*—April 24, 1866.—A transverse groove in the head of the lever receives the wire, which is bent by the vibration of the lever; a hook holds the lever in position in line with the wire.

Claim.—The arrangement and combination of the lever A, hook D with drum B, and rims E, when constructed and operated as set forth and for the purpose described.

No. 54,120.—Lewis Crooke and Robert Crooke, New York, N. Y.—*Compressed Rod Solder.*—April 24, 1866.—The composition of lead and tin is expressed in the form of rods through die holes in a perforated plate by the force of a hydraulic ram.

Claim.—The compressed rod holder, hereinbefore described, consisting of lead and tin combined by fusion and subsequently expression through a die, the same being a new manufacture.

No. 54,121.—Lewis Crooke and Robert Crooke, New York, N. Y.—*Machine for the Manufacture of Rod Solder.*—April 24, 1866.—The solder contained within a steam heated block is expressed therefrom through the perforated bottom by the ram of a hydraulic engine.

Claim.—The hydraulic pressure solder machine, composed of the hydraulic cylinder and ram, the solder cylinder and piston, and the die, perforated with numerous holes of the form and size of the rods to be produced, all combined and operating substantially as set forth.

Also, the combination of the solder cylinder, piston, and die, perforated with numerous holes, as aforesaid, with a pipe to supply water to cool the solder cylinder, substantially as set forth.

No. 54,122.—H. W. Curtis, Worcester, Mass.—*Cultivator.*—April 24, 1866.—The wings which follow the central share are expanded or contracted by segmental racks and a pinion.

Claim.—The wings E E connected at the rear of the plough or share D by means of joints, in combination with the segment racks G G and the pinion H, for adjusting the wings E E, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 54,123.—Dwight Cushman, Hartford, Conn.—*Water Wheel.*—April 24, 1866.—The buckets approximate a U shape, the bow somewhat flattened. The plate on the inner edge fits the central hub, and the outer edge corresponds to the general cylindrical form.

Claim.—A water wheel consisting of a series of buckets B, having their faces standing at an obtuse angle from the hub, and having their outer edges forming a vertical line, or nearly so, as shown by the line extending from *e* to *e* of figure 4, arranged and operating in combination with the hub A, as herein shown and described.

No. 54,124.—John M. Davis, St. Louis, Mo.—*Track Clearer for Mowing Machines.*—April 24, 1866.—To the rear of the curved plate are attached two prongs; the upper one is adjustable to vary its angle with the ground and the height of its point.

Claim.—The curved mould-board shaped blade *a* provided with the adjustable rod D′, when said blade is constructed as described and is applied to the shoe B and finger bar A, in the manner and for the purpose herein specified.

No. 54,125.—Walter Dawson, Pottsville, Penn.—*Car Truck.*—April 24, 1866.—Projections on the truck frame are received in sockets beneath the platform or bed piece of the frame.

Claim.—The bearings A^4 and B^4, or their equivalents, arranged relatively to the truck and to the load, substantially in the manner and for the purpose herein set forth.

No. 54,126.—M. Decamp, South Bend, Ind.—*Revolving Grain Feeder.*—April 24, 1866.—The grain is fed from the hopper by spirally arranged scrapers on a revolving shaft.

Claim.—The roller *d* provided with spirally arranged scrapers *f f f*, in combination with the inclined sides *b* and opening *c*, the several parts being arranged and operating as and for the purpose specified.

No. 54,127.—George W. Devin, Ottumwa, Iowa.—*Marking Stock.*—April 24, 1866.—The label is attached to the ear by a headed rivet.

Claim.—The rivet *a* provided with a head and shoulder, as described, when used with the label or plate A, for the purpose of marking stock, substantially as described.

No. 54,128.—Matthias Devoe, Marysville, Kansas.—*Water Wheel.*—April 24, 1866.—An endless series of buckets revolving in a horizontal plane around two vertical drums and set obliquely across the current, so as to utilize its force on one side by impingement on the buckets, which swing open in returning.

Claim.—The endless chain of plates D provided with swinging buckets E, and placed around polygonal rollers B B, fitted in a suitable framing A, all arranged to operate substantially in the manner and for the purpose herein set forth.

No. 54,129.—Thomas B. Dexter, Lynn, Mass.—*Steam Valve.*—April 24, 1866.—The openings permit access to the interior.

Claim.—The shell A provided with the openings and plugs *m*, for the purpose of introducing material and enabling the valve to be ground to its seat without removing the hub D or other parts, as set forth.

No. 54,130.—Perry Dickson, Jersey City, N. J.—*Lever Power of Windlasses, &c.*—April 24, 1866.—The dogs are attached by slides to the vibrating lever, and the slides are adjustable to and from the pivot of oscillation of the lever, to vary the leverage and the extent of motion.

Claim.—The connecting of the dogs D of the pulley C to the lever H, through the medium of slides G G, arranged as shown, or in any equivalent way, so as to admit of the slides being adjusted on the lever at a greater or less distance apart, in order to vary the speed and power of the device, substantially as and for the purpose specified.

No. 54,131.—James Downing, Philadelphia, Penn.—*Machine for Cutting Shoe Soles.*—April 24, 1866.—The leather and the metallic pattern are clamped to a circular revolving table. The knife is supported on swivelled arms and follows the edge of the pattern, being actuated by a cam and a toothed foot lever, which also raises a weight to perform the return motion.

Claim.—A machine for cutting shoe soles, constructed and operated substantially as herein described and for the purpose set forth.

No. 54,132.—Oliver P. Drake, Boston, Mass.—*Apparatus for Carburetting Air.*—April 24, 1866.—The drum has internal vertical flanges to which is attached an elastic sheet radially contracted and expanded by a frame whose central annulus is sleeved upon a shaft and revolved around the axial line; each compartment in the drum forms a blower which passes the air successively to a reservoir, a regulator, and a carburetting chamber.

Claim.—The combination as well as the arrangement of one or more vaporizers B′ B, their induction and eduction pipes *e u′*, and a system of pipes *t′ x′ y′ z′*, and stop-cocks, so arranged as to enable the air to be driven either through the whole of such vaporizer or vaporizers, or a portion or portions thereof.

Also, the improved air-forcing apparatus composed of the drum A and the series of flexile sheets *k*, as explained, and having mechanism substantially as described for operating them by means of a cranked shaft, such mechanism being the annulus *o* applied to the crank *p*, and the series of rods *n n* connecting such annulus with the movable plates *m m* of the several bellows.

Also, the improved flexile top ærometer E, having the cap *w*, and guide *x*, combined and arranged with its disk *v* and flexible top *u*, as specified.

Also, the combination as well as the arrangement of the air-forcing apparatus, the annular channel *g*, and the ærometer E.

Also, the combination as well as the arrangement of the chamber F, the annular channel *g*, the air-forcing apparatus, and the ærometer.

Also, the automatic combination arranged in the chamber F, and, for operating the lever valve *h′*, the same consisting of the pin *q′*, lever *m′*, catch *n′*, and the arms *o′ p′* applied to the shaft D.

Also, the combination of the weight *d′*, rod *c′*, shaft *b′*, arm *a′*, annulus *y*, and spring *z*, or the equivalent thereof, with the ærometer E, constructed substantially as described.

Also, the arrangement of the supply tank C, and its communicating pipe E, with the vaporizer B′.

Also, the combination of the air pipe *d* with the air-forcing apparatus or its pipe *e* and the supply tank C, arranged and connected with the vaporizer as set forth.

No. 54,133.—WILLIAM A. DUNCAN, Syracuse, N. Y.—*Machine for Raking and Loading Hay.*—April 24, 1866.—The rake heads move in longitudinal slots in the periphery of the revolving cylinder, and are actuated by the engagement of their ends in cam grooves; they project to gather, and retract to deposit, hay upon the elevator. The hay is gathered by oblique boards in front and prevented from escaping behind by the adjustable gravitating teeth.

Claim.—First, the arrangement of the folding gathering boards H, bars G, and elastic teeth I, in combination with the frame A, all constructed and operating in the manner and for the purpose herein specified.

Second, the loaded tooth H, one or more, fitted between rollers *g* in the rear cross-bar of the frame A, substantially as and for the purpose specified.

Third, the adjustable board or plate I*, placed on the rear of frame A, in connection with the cylinder D, provided with rakes, substantially as and for the purpose set forth.

Fourth, the arrangement of the sliding fork bars E, cylinder D, and cams F, constructed and operating in the manner substantially as described.

Fifth, the ribs *m* attached to the inner side of the rear cross-bar of the machine, substantially as and for the purpose set forth.

Sixth, the combination of the cylinder D, provided with sliding rakes, the elevators, adjustable tooth or teeth, and gathering boards provided with elastic teeth, all arranged to operate substantially in the manner as and for the purpose herein set forth.

No. 54,134.—TIMOTHY EARLE, Valley Falls, (Smithfield,) R. I.—*Egg Beater.*—April 24, 1866.—The spindle is journalled in bearings on a handle; the upper and lower pinions are alternately rotated and in different directions by the segment toothed wheel.

Claim.—The combination of the spindle B with its beaters *a a·a*, the pinions D D′, and the toothed sector C, the same being arranged to operate together as described for the purposes specified.

No. 54,135.—S. D. ENGLE, Hazleton, Penn.—*Watch.*—April 24, 1866.—The watch movement is enclosed in a separate interior box, which is so placed within an outer case as to permit reference and removal.

Claim.—First, the combination of the studs *c* and ring B, arranged with the body H, recess *d*, and notches *f*, constructed and operating in the manner and for the purpose herein described.

Second, the cup *h*, with its flange h^2, and washer *i*, arranged with the key-hole *g*, in the manner and for the purpose herein described.

No. 54,136.—CHARLES H. FIELD, Providence, R. I.—*Manufacture of Watch Rims.*—April 24, 1866.—The annular planchet of sheet metal is swaged by successive dies into the form of a watch rim.

Claim.—The means substantially as herein described for producing a watch rim from a single piece of metal, as set forth.

No. 54,137.—CHARLES H. FIELD, Providence, R. I.—*Manufacture of Watch Backs.*—April 24, 1866.—The bezel is made continuous with the back by the annular rebate on the cameo die.

Claim.—The means substantially as herein described for producing a watch back with the bezel on it, at one operation, as set forth.

No. 54,138.—M. FOREACRE, Harrisburg, Ohio.—*Sheep Rack.*—April 24, 1866.—The rack occupies a portion of the front; the grain is fed by a rear hopper to the trough under the rack.

Claim.—First, the above-described combination of hay rack and grain trough, the whole being constructed substantially as set forth.

Second, making the upper part of the front of the hay rack of the board A, in combination with short rounds F, for the purpose of preventing the hay seed from falling into the wool of the sheep, substantially as specified.

No. 54,139.—J. L. FOUNTAIN, New Milford, Ill.—*Combined Seeder and Cultivator.*—April 24, 1866.—The hounds rest upon the carriage and support the suspended cultivator and seed apparatus.

Claim.—First, the arrangement of hanging the cultivator to the hounds C at Q, and by links *p* the levers S *r*, in combination with the hounds, axle, and cultivator frame, as and for the purposes set forth.

Second, the adjustable arms D, cross-brace F, and pieces E E, for extending and contracting the frame, in combination with the seeding apparatus, lever L, and seat O, arranged as and for the purpose described.

No. 54,140.—ELIJAH FOWLER, New York, N. Y.—*Settee and Table.*—April 24, 1866.—The hinged leaf is vibrated vertically, and the hinged seat board laid over to make the conversion. An extension board is supported by the edge of the raised seat and by an outer leg.

Claim.—First, the attaching of the table C to the settee by means of the slots *c c'*, made in the sides of the cleats *b b*, in connection with the pins *d d'*, attached to the side pieces A A' of the settee, all arranged substantially as shown and described.

Second, the skirt board D, provided with the adjustable leg E, and applied to the settee and table in the manner substantially as herein shown and described.

No 54,141.—GEORGE FROST, Cambridge, Mass.—*Tree Protector.*—April 24, 1866.—The barrier has two cylinders and an annular disk; it is suspended by a membrane from a ring which clasps the trunk.

Claim.—The arrangement of the ring A, and the two tubes B C, when combined with the suspensory guard D, the two tubes under such an arrangement being made to project both above and below the ring as explained.

Also, the arrangement of the suspensory guard D, with respect to the upper edge of the inner tube C of the trough *a*, viz., below the said edge, and so that there may be an annular channel between the guard and the tube, as represented.

No. 54,142.—RODMOND GIBBONS, San Francisco, Cal.—*Adjustable Back Strap for Vests.*—April 24, 1866.—Explained by the claim.

Claim.—As a new article of manufacture the arrangement with the right and left straps, or tags, of a vest, pantaloons, or other garment, which said straps, or tags, have no other fastening attached, of an elastic strap having a buckle at each end, and being thus adjustable and detachable, all substantially as described.

No. 54,143.—WILLIAM H. GOODALE, Colton, N. Y.—*Attachment for Upholstery Springs.*—April 24, 1866.—The lower coil is tied to the slat.

Claim.—The securing of upholstery springs to their slats by means of strips C of metal, applied in the manner substantially as shown and described.

No. 54,144.—ALEXANDER HAMAR, New York, N. Y.—*Mode of Boring Artesian Wells.*—April 24, 1866.—The cutters are pivoted to the drill head, and expand by contact with the rock; their play on their pivots relieves the latter by jamming them together and against the curved face of the drill head.

Claim.—First, the combination with the drill stock of the hinged, expanding cutters, when constructed, arranged, and operated substantially as described.

Second, the combination of the guide rod and cone with the drill stock and expanding cutters, substantially as and for the purpose described.

Third, expanding cutters having free play on their bearings to relieve their pivots from all strain of the concussion, and so formed as to be expanded by the contact of the drill head.

No. 54,145.—THOMAS J. HALLIGAN, New York, N. Y.—*Waxed-thread Sewing Machine.*—April 24, 1866.—This invention cannot be briefly described. Both the upper and lower threads are waxed; the upper one is waxed and smoothed in the machine; the threads and the parts with which they come in close contact are heated by lamps above and below the table.

Claim.—First, the construction and arrangement of the upper waxing, smoothing, and thread-controlling apparatus, as described, in combination with the heater, substantially as set forth.

Second, the combination of the spool B^4, vibrating take-up bar B, and a wax cup C, when these parts are arranged upon the bracket A' as described.

Third, the construction and arrangement of the wax cup C, rollers C^3 C^4, depressed bar C^5, and smoothing pads *c' c'*, in the manner and for the purpose described.

Fourth, applying the bar C^5 to a crank arm, which is furnished with a spring catch-arm c^3 in such manner that it can be conveniently released and adjusted upward, and also again moved down to its position and fastened at C, substantially as described.

Fifth, the metallic tubular spool B^4, which is supported upon tubular bearings in such a manner that heated air can be conducted through the spool for softening and keeping soft the waxed thread upon it, substantially as described

Sixth, the chimney E', constructed with branching tubes c^7 c^8, air combination, with the hollow metallic spool B^4, and the tubular heater D, substantially as described.

Seventh, the combination of the laterally sliding pulley B', on the take-up bar B, with the spool B^4, when said take-up bar is arranged directly in rear of the spool, substantially as described.

Eighth, the construction and arrangement of the incline-faced smoothing pads *c c'*, in combination with the double-cone roller C^4, substantially as and for the purpose described.

Ninth, the construction and arrangement of the metallic device D, upon the front of the needle-bar arm, in combination with a heater, whereby the upper waxed thread for an upper needle is kept warm, and subjected to heat nearly down to the needle, and whereby, also, heat is imparted to the needle bar and needle, substantially as described.

Tenth, the combination of the re-waxing cup F', arranged so that the needle will dip into it at every downward stroke of the needle bar, with the upper waxing cup *c*, both cups being subjected to heaters, substantially as herein described.

Eleventh, the construction of the attachment F^3 *e e*, in combination with a lower heater, all applied so as to heat all those parts of the machine which are arranged below or beneath the table A, and exposed to wax, substantially as described.

Twelfth, the combination of the pressure pad D^2 with the vibrating take-up bar B, substantially as described.

Thirteenth, a spring *p*, made adjustable substantially as described, and applied to the table or plate A^3 thereof, in such manner as to act with an increased and its greatest tension upon the thread which is passing from the shuttle bobbin, just as the shuttle is completing its stroke, substantially as and for the purpose set forth.

Fourteenth, the combination of the inclined spring *p*, lever *p'*, and adjusting nut p^2, with a shuttle, substantially as described.

Fifteenth, the construction of a feed wheel, with a serrated steel band P' shrunk upon it, substantially as described.

Sixteenth, the removable grooved plate f^2, in combination with the clamp *g* and needle bar A^2, substantially as and for the purposes described.

Seventeenth, the arrangement of the elastic pressure pad *r*, and its bar r^2, in combination with the adjustable screw s^5, and the nut s^6, substantially as and for the purpose set forth.

Eighteenth, the hooked looper J J', constructed, arranged, and operated substantially as described, and for the purpose set forth.

Nineteenth, the construction of the shuttle and bobbin as represented in Figs. 5 and 6, and as herein described, for the purpose set forth.

Twentieth, the manner herein described and as represented in Figs. 6^1 6^2 of combining the bobbin and shuttle, and holding in place and applying spring pressure to the bobbin by means of a single pivoted lever spring clamp, for the purpose set forth.

No. 54,146.—GEORGE H. HAMMER, Newville, Penn.—*Mop Head.*—April 24, 1866.—The cloth is passed around the bar on the end of the handle and the stirrup bar, and the ends sewed together. The spring stirrup is pushed down and rotated to wring the cloth.

Claim.—The mop head, consisting of the frame B, cross-bars *b* and *n*, in combination with the spring C, when said parts are arranged to operate as herein shown and described.

No. 54,147.—HENRY HAMMOND, Bridgeport, Conn.—*Shot and Cartridge Pouch.*—April 24, 1866.—Either repository discharges by the common duct at the junction.

Claim.—First, in combination with the pouch or holder in form of a shoulder belt as described, the mouth-piece, consisting of the tube A, for discharging the cartridges, and the two catch pieces *b* and *c* combined therewith, and with suitable moving mechanism for alternately forcing in and drawing back the pieces *b* and *c*, substantially in the manner and for the purpose herein set forth.

Second, the single gate *m*, when used in combination with the branches *a a'* and D D' of the holder, for the purpose of closing one or both of these branches, and stopping the discharge therefrom, as herein described.

No. 54,148.—DENNIS R. HARDER, North Chatham, N. Y.—*Method of Boring Oil Wells.*—April 24, 1866.—The devices are for rotating the drill by a detachable rotating cylinder suspended from the end of the walking beam.

Claim.—Rotating the drill and drill rope continuously in one direction during the operation of drilling, by means of a suspended reciprocating cylinder having grooves in its surface which are acted upon by pins *k k'* through the centre of which cylinder the drill rope is passed loosely, substantially as described.

Second, supporting and guiding a reciprocating device adapted for rotating the drill and drill rope in such manner that this device shall receive a perpendicular movement when actuated by means of a vibrating working beam A', substantially as described.

Third, the grooved cylinder F with a hole through its centre, and also with a hollow adjustable jackscrew F^2 for receiving and holding the drill rope, all constructed substantially as described.

Fourth, the combination of rope clamps *h h*, jackscrew F^2, and a rotating cylinder F, substantially as described.

Fifth, the divided cylinder F, in combination with the divided screw F^2, substantially as described.

Sixth, attaching the rotating device F to the working beam A' in such a manner that said device F can be detached therefrom, and also detached from the drill rope at pleasure without lifting the drill from the well, substantially as described.

Seventh, the stationary fork *l*, spring pins *k k*, and rotating cylinder F, in combination with a drill rope which passes through the centre of said cylinder and which is affixed thereto, substantially as described.

Eighth, the perpendicular stop post G, in combination with the working beam A', lifting cam *a*, and the device for rotating the drill rope C, substantially as described.

Ninth, in combination with the device for automatically rotating the drill rope C continually in one direction, providing means for lowering the drill as the well deepens, substantially as described.

Tenth, in combination with a drilling apparatus wherein the feeding rope passes through the turning guide which is turned with an intermittent motion always in the same direction, a device for preventing the rope from becoming twisted, and also for supplying the rope to the drill, the said device having but a single axis of revolution, substantially as described.

Eleventh, the combination of a drill which is suspended by a rope and receives a vertical rotary motion with a device for preventing the rope from becoming twisted and also carrying the supply rope, the said device having but a single axis of revolution, substantially as described.

No. 54,149.—P. HARLOW, Kingston, N. Y.—*Ash Sifter.*—April 24, 1866.—The partitions are so pivoted as to form means of opening the cylinder for receiving and discharging.

Claim.—The arrangement of the partitions *l* and *p* within a barrel or cylinder sieve in combination with the delivery spout *v* of the outer casing or box, operating together, substantially in the manner described and for the purpose specified.

No. 54,150.—ANDREW HARTUPEE, Pittsburg, Penn.—*Steam Engine.*—April 24, 1866.—The exhaust steam of the smaller cylinder is expanded in the receiver and then passes to the larger cylinder; the rods of each piston are connected to a common cross-head and their valve stems connected by a rock shaft; air circulates in the space between the cylinder heads; boiler steam may be blown through the receiver.

Claim.—First, the arrangement of the two cylinders A and C, having three piston rods E E and *p'*, fastened to a common yoke or cross piece K, when connected with the receiver or moderator B.

Second, the combination of the valve or cock J, pipe I, and pipe J' with the receiver or moderator B, as described and for the purpose specified.

Third, the arrangement of the two cylinder heads F and G as specified so as to leave between them the space H, in the manner and for the purpose specified.

No. 54,151.—HORACE R. HAWKINS, Akron, Ohio.—*Horse Rake.*—April 24, 1866.—The upper ends of the teeth are coiled around a roller and extend through the lower ends of links which work in a cross-bar and enclose loop springs. An upright notched bar is attached to the cross-bar in front of the foot board, whose pivoted bar engages with an upright to maintain the working position. A bent foot lever disengages the locking bar.

Claim.—First, connecting the rake teeth with the body of the rake by a roller E, in combination with supporting the upper ends of the teeth by means of loops or links *c* and springs *d*, substantially as set forth.

Second, the combination with the upper ends *p* of the rake teeth of the links *c*, springs *d*, and cross-bar F, substantially as and for the purposes set forth.

Third, the combination with the notched bar P, attached to the cross piece M, of the locking bar Q and its spring *i*, substantially as set forth.

Fourth, the combination with the foot board or treadle N, and locking bar Q, of the bent lever R, arranged and operating substantially as and for the purposes set forth.

Fifth, the combination with the teeth *b*, roller E, cross-bar F, and pieces H H, of the links *n n*, clearer frame D, and fingers S, said parts being arranged and operating in the manner and for the purposes set forth.

No. 54,152.—GEORGE H. HENKEL, Middletown, Ohio.—*Car Brake.*—April 24, 1866.—The tumbler is connected by its lower angle to the brake levers, and has anti-friction rollers on its upper angles where it touches the string beam. The tumbler is actuated by connecting rods from the brake.

Claim.—First, the tumbler D, or its equivalent, in combination with the levers C C for operating car brakes, in the manner and substantially as described.

Second, rods *d* and tumbler D, provided with the friction rolls *x x*, in combination with string beam A', or its equivalent, substantially as described.

No. 54,153.—JOSEPH L. HEWES, Newark, N. J.—*Cut-off Valve.*—April 24, 1866.—The collar on the induction valve stem by occupation of space economizes steam. The cut-off toe is moved by the crank; a regulating slide operated by the governor determines the point of cut-off.

Claim.—The revolving crank A, having double or more throw than the valve is required to lift, in combination with the cut-off toe D, and regulating toe G, and their combination with the governor, in the manner and for the purpose substantially herein set forth.

Second, the collar I, or its equivalent, placed in the valve chamber, in the manner and for the purpose substantially herein set forth.

No. 54,154.—CHARLES HEWITT, Trenton, N. J.—*Machine for Forming Corrugated Wrought Iron Plates for Railroad Wheels.*—April 24, 1866.—The sheet is pressed into form between a corrugated die and a series of benders operated by gearing and corresponding with the corrugations in the die.

Claim.—The combination of the series of benders with the mould or die, substantially as described.

No. 54,155.—G. G. Hickman, Coatesville, Penn.—*Carriage Wheel.*—April 24, 1866.—A threaded sleeve on the end of the spoke traverses in a socket which bears against the inner edge of the felloe.

Claim.—The combination of concave-faced hollow socket A, laterally sustaining the sides of the felloe, with the hollow threaded cap piece B, the elastic material E, spoke C, and felloe F, arranged and operating as described and represented.

No. 54,156.—D. K. Hickok, Morrisville, Vt.—*Journal Box.*—April 24, 1866.—The rollers have curved faces which occupy recesses in the axle and the divisible box; their journals are in loose slotted rings.

Claim.—The divided and adjustable box D, in combination with the rollers A, slotted bearings C, and grooved shaft G, constructed as described and for the purpose specified.

No. 54,157.—Abram D. Higham, Jersey City, N. J.—*Distilling Petroleum.*—April 24, 1866.—Explained by the claim.

Claim.—The method substantially as above described for conducting distillation of hydrocarbons, that is to say, distilling the lighter portions of the charge in vacuo and the heavier portions under pressure, as and for the purpose set forth.

No. 54,158.—Warren F. Hill, Portland, Me.—*Sash Supporter and Fastener.*—April 24, 1866.—The serrated face of the pivoted spring lever maintains the sash by frictional contact; the lever is vibrated out of contact by a rod.

Claim.—First, the combination of the bar F, the bent lever K B, the spring G, and projection L, with the plate A, all constructed and arranged substantially as and for the purposes herein set forth.

Second, the use in conjunction with the above combination of the recess E, for the purpose specified.

No. 54,159.—George Hillegass, Philadelphia, Penn.—*Device for Tightening Wagon Tires.*—April 24, 1866.—A threaded inner extension of one end of the cut tire is engaged by a nut in the other end and the gap closed thereby.

Claim.—First, a device for contracting the tire of a wagon or other band by an endless screw F, nut E, collar C, and tongue B, substantially in the manner set forth.

Second, the rib G, on the inside of the tire A, in combination with a device for contracting the tire, substantially as set forth.

No. 54,160.—Samuel Hoffheins, Hamilton Township, Penn.—*Cultivator.*—April 24, 1866.—The feet, hands, and shifting seat combine to tilt or replace the plough beams.

Claim.—The combination of the devices for raising the shovels from the ground, and consisting of the levers G G, foot boards H H, and rocking seat I, operating substantially as described and represented.

No. 54,161.—Ferdinand Hoffman, West Cambridge, Mass.—*Machine for Polishing Wood.*—April 24, 1866.—The wood carriage is suspended in grooves, and has a reciprocating longitudinal motion under the scraper, which has a vertical and transverse adjustment.

Claim.—The combination of the movable shaft boxes *l l*, their guides *m m m m*, and lifting mechanism with the shaft I, and its screw K, nut H, and the plane stock G, applied to a movable carriage or bed to hold and move the work to be scraped or otherwise reduced, and to operate substantially as hereinbefore explained.

No. 54,162.—Lewis G. Hoffman, Albany, N. Y.—*Lock.*—April 24, 1866.—A button on the case prevents the retraction of the bolt by contact with the rear extension rod.

Claim.—The rod C, orifice D, and the button E, as applied to door locks, substantially as described and for the purposes set forth in the above specification.

No. 54,163.—Andrew J. Homan, Yonkers, N. Y.—*Slide Valve.*—April 24, 1866.—The inlet and exit ends of the steam ports are in the face of the valve, and the ports pass around the exhaust openings.

Claim.—The valve *f*, formed with the steam ports *h* and *h'*, above and around the exhaust ports *i* and *i'*, in combination with the inlet steam port *e*, and port *c d k k'*, in the valve seat, as and for the purposes, set forth.

No. 54,164.—Lewis Hover, Chicago, Ill.—*Sad-Iron Holder.*—April 24, 1866.—The holder is detached from the handle of the sad-iron by sliding laterally one section of the divisional holder.

Claim.—First, constructing the handle A, and shields C, of a sad-iron holder in two parts, having a sliding lateral movement with respect to each other, substantially as and for the purposes specified and shown.

Second, the combination and arrangement of the two parts *a a' c c'*, with the guides B, constructed and operating substantially as herein set forth.

No. 54,165.—James P. Howell, New York, N. Y.—*Tire Shrinker.*—April 24, 1866.—The tire is grasped by two pivoted eccentrics which respectively clamp it against a pivoted and a stationary jaw; the jaws are approached by the motion of the lever; the shape of the upset portion is maintained by the vice.

Claim.—First, the vice N, when supported on a pivot, or its equivalent, to allow it a circumferential motion in direction of the motion of the jaw *d* of the swinging arm C, substantially as set forth.

Second, the bed plate *m* cast in one piece with the stationary arm *d*, and used in combination with the swinging arm *c*, for the purpose and in the manner substantially as herein set forth and shown.

Third, the combination of the pawl R, and ratchet *u*, with the lever M, for operating and holding the movable jaw *j* of the vice, substantially as and for the purposes set forth.

No. 54,166.—William W. Hubbard, Edinburg, Ind.—*Corn Planter.*—April 24, 1866.—A wire with balls at regulated distances is stretched across the field and actuates the seeding devices of the passing machine.

Claim.—First, the slotted levers R R, at each end of the shaft E, when used for operating the said shaft, with its connections, substantially as and for the purpose herein specified.

Second, the shaft E, provided with the seed cylinders H H, as constructed and arranged with the wire springs F F, and rod G, substantially as and for the purpose herein specified.

Third, the T-shaped lever O, provided with eyes as described and used, substantially as and for the purpose set forth.

Fourth, the arrangement of the lever O, disk L, rod M, plate *a*, and lever N, when used substantially as and for the purpose specified.

Fifth, the wire or cord *j*, provided with balls or stops when used with the levers R R, or their equivalents, for operating the seed cylinders and regulating the distance the grain is to be dropped, as is herein fully set forth.

Sixth, the seed spout S, as constructed, when used with the rods U, said rods U being formed as described and connected to the seed cylinders, as and for the purpose specified.

No. 54,167.—Liveras Hull, Charlestown, Mass.—*Elastic Webbing.*—April 24, 1866.—The warp of elastic strands is stretched while the weft is woven in so as to contract the latter and form the selvage into a frilled edge when released from the loom.

Claim.—The new or improved manufacture, fabric or band as composed not only of a series of caoutchouc strands, but of a series of linen, cotton or silk threads so braided on and beyond the caoutchouc strands when stretched or extended lengthwise as to form, by the contraction of the latter, frills of braiding at the opposite edges of the band, as explained.

No. 54,168.—William Hunter, Berkeley Springs, W. V.—*Collar and Neck Tie.*—April 24, 1866.—The lower edge of the collar is grasped by a clasp, one leg of which is left unturned to clasp the neck ribbon from beneath.

Claim —As a new article of manufacture, the collar and neck-tie confiner, made substantially as herein described and for the purposes specified.

No. 54,169.—Shadrach Johns, Waupun, Wis.—*Shifting Rail for Carriage Tops.*—April 24, 1866.—The upper rail is detached from the seat by the disengagement of its feet from the slots in the upper edge of the seat, back, and sides.

Claim.—First, the adjustable and locking feet attached to the lower rail, constructed and operated substantially as described and for the purpose set forth.

Second, the screw rod G, in combination with rail B′, constructed and operating substantially as described and for the purpose set forth.

No. 54,170.—John W. Jones, Portland, Maine.—*Knife for Removing Corn from the Cob.*—April 24, 1866.—The gauge is adjustable on the knife to suit the varying depth of the kernels.

Claim.—The above described knife provided with a broad adjustable gauge, substantially as set forth.

No. 54,171.—David C. Jordan, Sr., Brooklyn, N. Y.—*Hinge.*—April 24, 1866.—Each leaf has flanges which lap upon two faces of the door or shutter.

Claim.—The butt hinge with flange or leaves to screw upon the face and edge of the door, and upon the edge and face of the jamb, constructed as described.

No. 54,172.—James Kee and John Sloan, Philadelphia, Penn.—*Ash Box.*—April 24, 1866.—The box is placed at the curb of the pavement, has removable trays and a lid supported in open position by a segment, and held closed by a spring catch.

Claim.—The raised cast-iron ash or garbage box, provided with interior receptacles, as and for the purpose described.

Also, the combination of the lid F, segment G, and spring H, operating as and for the purpose described.

No. 54,173.—Washington Kendrick, New York, N. Y.—*Evaporating and Drying Apparatus.*—April 24, 1866; antedated April 19, 1866.—An air-forcing and an air-exhausting fan combine to make a circulation through the chamber.

Claim.—The combination of the fans B C with the chamber A, arranged as described; that is to say, the fan B discharging a current of air into the chamber A, and the exhaust fan C, removing the air together with the vapor of evaporation.

No. 54,174.—George G. Kniffin, Long Island City, N. Y.—*Sad-Iron.*—April 24, 1866.—The flanges on the sad-iron embrace the feet of the detachable handle; a vertical bolt and a plate which maintains the distance apart of the legs secure the engagement.

Claim.—The dovetailed flanges *c*, on the standards of the handle B, to fit into correspondingly dovetailed sockets on the sad-iron, in combination with a drop catch D, all constructed and operating substantially as and for the purpose described.

No. 54,175.—Theodore A. Kohn, New York, N. Y.—*Musical Clock.*—April 24, 1866.—The rectangular parallel plates are perforated to admit the pivots of the levers connected to the bellows and organ pipes by the wires. The cuckoo is supported on the end of a lever and operated by a wire connection to the striking apparatus.

Claim.—The construction of two L-shaped plates marked A, in combination with the plate D′, having the wire K′, and the manner of attaching the swinging lever marked E thereto, as shown and described.

No. 54,176.—William B. Krum, Troy, Penn.—*Ox Yoke.*—April 24, 1866.—The blocks which rest upon the necks of the oxen are pivoted to the yoke and vibrate laterally.

Claim.—The independent action of the collar B, and bows C, from main yoke A, which is produced by means of a hinge formed by D E, which allows the bows to always remain in an easy position, when the oxen are ploughing or working on uneven ground, which improvement does away with the cramping and twisting produced by the old method.

No. 54,177.—Israel Lancaster, Baltimore, Md.—*Grain Binder.*—April 24, 1866.—Cannot be briefly described.

Claim.—First, the sliding frame 4, acting in combination with the shaft 7, provided with the notch 8, and friction wheel 9, arm 17, with the springs upon it and the piece 16, to which it is attached; collar 24, with the groove 25, and pin 26, giving the longitudinal motion to the piece 16, tube 14, with the spiral thread 27 upon it, and the block 28, which gives the rotary motion to the tube, all constructed, arranged and acting in the manner and for the purpose set forth.

Second, the application to the sliding block *n*, of the irregular groove 32, to operate the block 28, and of the irregular piece 41, to throw out the sliding frame 4, to operate the lever 78, which cuts the cord, and to operate the lever 79, which releases the sheaf band, constructed in the manner and for the purpose set forth.

Third, the device for releasing the sheaf band, consisting of the lever 79, the two bars 48 and 55, and the arm 80, constructed in the manner and for the purpose set forth.

Fourth, the mechanism for cutting the cord, consisting of the lever 78, the bar 77, the arms 76 and 74, the rod 72, and the knife 73, constructed for the purpose and in the manner set forth.

Fifth, the sliding jaw 66, with its spiral spring 68, and the self-acting device 64, 65, 70, acting in combination in the manner and for the purpose set forth.

Sixth, the projection 43, and block 50, in combination with the levers 51, 44, 60, and 61, the wheel 62, the rods 53 and 46, the bars 49 and 57, and the lever 56, all constructed in the manner and for the purpose set forth.

Seventh, the device for giving the longitudinal motion to the shaft C, consisting of the wheel *e*, with its segmental projections *t* and *u*, the coupling W W and X, and the wheel *v*, acting in the manner and for the purpose set forth.

Eighth, the sectional gear *r*, with its projection Z, the sliding rack S, the stop 1 1, with the spring 2, operating in combination in the manner and for the purpose set forth.

Ninth, the reciprocating bars *g g g g*, constantly travelling in parallel paths without lateral motion, the connecting rods *h h h*, and O O O O, the short arms *i i i*, and the long arms K K K, on the vertical shafts *j j j*, all acting in combination in the manner and for the purpose set forth.

No. 54,178.—W. H. Landbeck, Rochester, N. Y.—*Wrench.*—April 24, 1866.—Various forms of jaws may be inserted in the sockets to constitute it a universal wrench.

Claim.—The special construction and arrangement of the wrench, viz: with the head *a* of the handle A and the bearing *l* of the block D so formed as to receive removable jaws adapted to different purposes, and with the ratchet block *s*, employed in connection with the lever B in such a manner as to insure a strong hold upon the ratchet bar, and draw the jaws toward each other, as set forth.

No. 54,179.—Joseph C. Lawrence, Brooklyn, N. Y.—*Brush.*—April 24, 1866.—The bristles are arranged around the block of rubber, which is expanded laterally against them and the inside of the socket by a headed screw.

Claim.—Confining and securing bristles or other material for brushes in a socket by means of the expansion therein of an elastic or expansible material, substantially as described.

No. 54,180.—Charles Learned, Indianapolis, Ind.—*Machine for Cutting Laths.*—April 24, 1866.—The lath is cut by a reciprocating knife from a board which is fed thereto by its gravity. A flexible adjustable guide preserves the perpendicularity of the board and releases it after the cut. The rests reciprocate in dovetail slides and are operated by the bumper on the knife frame and the recoil spring.

Claim.—First, the adjustable flexible guide C and loop E, arranged and operated in the manner and for the purpose substantially as set forth.

Second, operating the reciprocating rests H in the manner and for the purpose substantially as set forth.

No. 54,181.—Cancelled.

No. 54,182.—William K. Lewis, Boston, and J. W. Bailey, West Brookfield, Mass.—*Sealing Fruit Cans and other Vessels.*—April 24, 1866.—The soldering is effected in an air-exhausted chamber.

Claim.—Hermetically sealing a vessel or vessels containing fruit or any other article of food or other substance, whether in its natural state or treated by heat, or cooked or in any other proper manner prepared, while in a chamber or chambers or receivers, from which the air has been exhausted and a vacuum or partially so produced, substantially as herein described and for the purpose specified.

No. 54,183.—J. Mac Donough, NewYork, N. Y.—*Submarine Torpedo.*—April 24, 1866.—The torpedo has an upper powder chamber and communicates by a flexible air tube and electric circuit with the shore. The former is to make it rise by the inflation of the tube, to strike a vessel from beneath, and the latter to explode it by electricity.

Claim.—First, the construction of a torpedo so as to be capable of elevation or depression under water at the will of the operator, by means of air, substantially as described.

Second, the combination with a torpedo of a water chamber A open at the bottom and adapted to allow the water to be expelled by air or gas when required, substantially in the manner and for the purpose set forth.

Third, the shell G G, with a water and air chamber open at the bottom, a closed powder chamber near the top, and a passage extending from near the top of said water and air chamber, adapted to be connected by a flexible pipe from the bottom of the shell to an outside source from which air or gas may be received, substantially in the manner and for the purpose herein set forth.

Fourth, in combination with the above, coiling a quantity of the flexible tube *d d* within the base of the torpedo so as to be uncoiled as the topedo rises, substantially as and for the purpose herein set forth.

Fifth, the combination of the electric wires *e* with the air tube *d*, substantially in the manner and for the purpose herein set forth.

No. 54,184.—George Mallory, Watertown, Conn.—*Fan.*—April 24, 1866.—The fan is stretched by a spring which is passed into an open seam around the edge.

Claim.—A fan constructed substantially as shown and described.

No. 54,185.—George Mann, Jr., and Henry Hise, Ottowa, Ill.—*Ventilating Car Window.*—April 24, 1866; antedated April 12, 1866.—The ventilating side windows of the projection are pivoted to the outer portion and secured open or shut by bolts; an opening is in the floor of the projection through which to spit.

Claim.—First, pivoting or otherwise securing the valves or side windows D D, to the stationary or front part C of the window, substantially as specified.

Second, providing such valves or side windows with bolts *b*, for securing them in either a closed or open position, substantially as described.

Third, making a hole or opening E in the bottom plate B of the frame of the window, for the purposes herein specified.

Fourth, the slide *d*, or its equivalent, in combination with the hole or opening E, for the purpose of closing the same, substantially as herein shown and described.

No. 54,186.—Samuel Marden, Newton, Mass.—*Peat Machine.*—April 24, 1866.—The walls of the mould are double, perforated and filled with absorptive material.

Claim.—In combination with a reciprocating follower, a mould box having a construction substantially as described.

No. 54,187.—D. W. Maurice, Springfield, Ohio.—*Lathe.*—April 24, 1866.—The bolt to be threaded is chucked and by the hand crank advanced and rotated to the sanctionary die.

Claim.—The combination of chuck *c*, socket D, and shaft B, with the screw sleeve E, arranged substantially in the manner as described and for the purpose set forth.

No. 54,188.—DUSTIN F. MELLEN, New York, N. Y.—*Machinery for Threading Screw Blanks.*—April 24, 1866; antedated April 13, 1866.—The socket die moves up to and operates upon the end of the blank, pointing it as it revolves in the mandrel. The stock has a series of tools which successively operate upon the threads to finish them by one movement.

Claim.—The tool block and tool holders, constructed, arranged, and combined substantially as and for the several purposes herein set forth.

Also, the construction, arrangement and application of the socket-cutter, for chamfering the end of the screw blank before threading, in combination with the threading apparatus, as set forth.

Also, the bar *s*, for throwing back the threading tools into place, as described.

Also, the cutting tool *o*, and its clamp *p*, combined as herein described.

No. 54,189.—DAVID H. MERRIAM, Fitchburg, Mass.—*Knife Handle.*—April 24, 1866.—The tangs occupy slots in the edges of the handle, and are secured by a plate at the hilt. The bolster has slots for the tangs and for the base of the blade.

Claim.—The combination and arrangement of the two tangs *a a*, and the blade B, or its equivalent.

Also, the application of the shoulder piece or bolster D to the tangs and blade, substantially in manner as specified.

Also, the application of the handle to the tangs and blade, substantially in the manner as described.

Also, the combination and arrangement of the cap E, with the tangs *a a*, and the blade B, or the same, and the handle C, substantially as set forth.

Also, the application of the handle to the tangs, blade and bolster, substantially as described.

No. 54,190.—WILLIAM T. MERSEREAU, Newark, N. J.—*Bag Frame.*—April 24, 1866.—When the frame is closed the jaw is brought within the cover, closing it more perfectly.

Claim.—Jaw C, in combination with the cover A, when the same shall be constructed and combined substantially as and for the purpose specified.

No. 54,191.—JAMES E. MORRISON, Washington, D. C.—*Cultivator.*—April 24, 1866.—The cultivator beams have flexible connections to enable the standards to preserve their verticality and adjust themselves to hillsides.

Claim.—First, a cultivator having double plough beams U U, hooks *o o*, clevis *p*, standards *x x*, and cross-bars *y y*, constructed, combined, and arranged substantially as herein specified.

Second, in combination with double plough beams united at their front ends as described, the standards *x x*, and cross-bars Y Y, constructed and operated substantially as and for the purposes set forth.

Third, the entire cultivator with its various devices, constructed, combined, and arranged substantially as and for the purposes herein mentioned.

No. 54,192.—LEANDER M. MOTT, Chicago, Ill.—*Manufacture of Lubricating Oil.*—April 24, 1866.—Evaporate the oil to a proper gravity, add salt, unslaked lime, saltpetre and potash, and boil it to the consistency required.

Claim.—The preparing of crude rock or mineral oil for lubricating purposes, and the deodorizing of crude rock and mineral oil by means of the application of the before mentioned chemicals directly to the oil, and subjecting the same to heat, as is substantially set forth above.

No. 54,193.—ROBERT MURRAY and GEORGE OAKES, Boston, Mass.—*Argand Gas Burner.*—April 24, 1866.—Gas passages pass through as well as between the upper and lower portions of the argand burner.

Claim.—First, constructing an argand gas burner in two pieces fastened together so as to form two gas-tight joints, and an air draught through both pieces, as described.

Second, the arrangement of the upper and lower castings in such a manner that the outer periphery of the upper portion of the latter is brought in close proximity with the inside of the outer wall of the upper casting, as and for the purpose specified.

Third, constructing and arranging a chamber between the upper and lower castings, as described and for the purpose specified.

No. 54,194.—HENRY S. MYERS, Mount Joy, Penn.—*Composition for Filling the Pores of Wood.*—April 24, 1866.—Chalk, white lead, Spanish white, plaster of Paris, glue and water.

Claim.—The compound formed by the ingredients, in the manner and for the purpose specified.

No. 54,195.—PETER H. NILES, Boston, Mass.—*Machine for Soldering Tin Cans.*—April 24, 1866.—The cans are consecutively brought under the action of a friction roller which causes

them to perform one revolution on an inclined table, the edge being immersed in melted solder. Raising the friction roller operates a pusher and brings the can next in series under the action of the roller.

Claim.—The method of soldering a cylindrical vessel of sheet metal by supporting it in an inclined position with reference to a pan of melted solder, in such manner that rotation of the vessel will cause the joint to be soldered to travel through the solder by means substantially as described.

Also, the employment of the friction rolls *c d* and the driving roll *h* for effecting the rotation of the can or vessel, arranged and operating substantially as described for the purpose set forth.

Also, the employment of mechanism for automatically introducing the cans to the action of the rolls and removing them therefrom, arranged and operating substantially as set forth.

No. 54,196.—HENRY P. NINDE, Oskaloosa, Iowa.—*Sorghum Evaporator.*—April 24, 1866.—The central pan is deeper and hotter than the side pans in which the feculencies congregate. The partition affords a means of parting the more purified from the raw juice.

Claim.—The combination of the three pans when constructed as set forth, and operated in conjunction with the sliding partition J, as described.

No. 54,197.—SHERMAN R. NYE, Barre, Mass.—*Stove-pipe Damper.*—April 24, 1866.—The damper is made in two parts; each is composed of curved, concave ribs; they move independently or together.

Claim.—The above described damper, consisting of the concave annulus A, the curved concave bars or ribs B, and the ribs C C′, constructed and operating as and for the purpose specified.

No. 54,198.—GEORGE B. OWEN, New York, N. Y.—*Calendar Clock.*—April 24, 1866.—The annular figured plate is placed between the works and the face, has ratchet teeth on its inner periphery, moved by a cam projection on the hour hand and connecting devices.

Claim.—The annular plate D, numbered and toothed and placed between bearings *a* so as to be capable of rotating freely, in connection with the cam G, lever E and pawl F, or their equivalents, applied to a clock movement, to operate substantially in the manner as and for the purpose herein set forth.

Also, providing the plate D with alternate large and small teeth, in connection with the opening in the front of the clock case, so that the plate D will be moved under two revolutions of cam G, to expose a succeeding number through said opening only once in twenty-four hours.

No. 54,199.—HENRY PALMER, San Francisco, Cal.—*Drill for Artesian Wells.*—April 24, 1866.—The double-edged cutter has a presentation upward and downward to cut in either direction.

Claim.—A double-edged drill cutting at the upward as well as at the downward stroke or blow, with bevelled shoulders or upward cutters inclining equally upon the adjacent planes, and at right angles with the stem, substantially as and for the purposes specified and set forth.

No. 54,200.—GEORGE W. PARSONS, Harrisburg, Penn.—*Broom Head.*—April 24, 1866.—The brush is closed in around the stick by the sheet-metal cap; the screw clamp binds upon the cap and the brush.

Claim.—The combination of a sheet-metal head with a metallic clamp, constructed substantially as described, when both are so arranged that the lower edge of the jaws of the clamp rests on the corn and the upper edge of the clamp rests on the lower edge of the metal head, and the handle and corn will be held in place by a single screw bolt, operating substantially as set forth

No. 54,201.—ROBERT G. PIKE, Middletown, Conn.—*Stopper for Bottles.*—April 24, 1866.—The cork is enclosed in a bag which hangs in the neck of the bottle.

Claim.—First, the elastic bag or sack with an elastic ring permanently fastened around the border of the opening thereof, or its equivalent, substantially in the manner and for the purpose as described, whether with or without the perforated cork or stopper.

Second, the stopper, whether of cork or other material, perforated for the passage of the air, for the purpose substantially as described.

Third, closing the orifice of bottles or jars by means of air acting expansively on an elastic bag or sack, placed within or over the orifice of the jar or bottle, substantially and for the purpose as described.

No. 54,202.—RUFUS POWERS, Prescott, Mass.—*Fire Alarm.*—April 24, 1866.—Explained by the claim.

Claim.—The use of fastenings or connections for wires in fire-alarms, so constructed with soft metal or other substance that they shall melt and release the wires, or give the alarm upon being heated as described, and in the manner and for the purposes set forth.

No. 54,203.—E. FREEMAN PRENTISS, Philadelphia, Penn.—*Mordant.*—April 24, 1866.—Sulphate of iron, 746 parts; sulphate of copper, 254 parts; sulphate of zinc, 110 parts.

Claim.—The mordant, composed substantially as and for the purpose described.

No. 54,204.—JOSEPH L. PRESBREY, Taunton, Mass.—*Apparatus for Moulding Crucibles.*—April 24, 1866.—The material is placed in the mould, whose sections are united by flanges. The central bag by inflation presses the material into shape.

Claim.—The combination and arrangement of the elastic bag and the crucible mould, substantially as described.

No. 54,205.—R. RAFAEL, New York, N. Y.—*Steam Generator.*—April 24, 1866.—The furnace is elevated, and the volatile results pass by diving and reverting flues to the base of the stack.

Claim.—The herein-described arrangement of the furnace in the upper part of the boiler and the succession of horizontal flues whereby the products of combustion are conducted in a zig-zag course to the bottom of the boiler and there discharged into the chimney, as explained.

No. 54,206.—J. H. RECTOR, Syracuse, N. Y.—*Saw-filing Machine.*—April 24, 1866.—The saw blade is clamped in a rack, in such relation to the dial that the required depth, rake, and bevel may be made by the reciprocating file. The index drum determines the distances between the teeth by limiting the movements of the rack.

Claim.—First, the combination of the index drum U, the lever and point S, the table J, the dial B, the rack K, and the pinion wheel *q*, all arranged substantially as described.

Second, the combination of the adjustable wheels N and *m*, with the table J, the dial B, the rack K, and the pinion wheel *q*, all arranged substantially as described.

Third, the combination of the treadle G, the index drum U, the lever and point S, the wheel N, and the wheel *m*, with the table J, and rack K, constructed as and for the purposes above described.

No. 54,207.—HARVEY A. REYNOLDS, New York, N. Y.—*Velocipede.*—April 24, 1866.—The fore wheels are propelled by stirrups and cranks; the caster hind wheel is guided by bridle lines connected to its carriage.

Claim.—First, operating the steering wheel by means of lines *n* passing over pulleys *r* at the sides of the horse's mouth, and connecting with a lever *j*, on the kingbolt or pivot of said wheel, substantially as specified.

Second, the combination of the slots *d* in the legs of the horse, with the extension *f* of the stirrup, working therein, substantially as and for the purposes set forth.

No. 54,208 —J. E. RICE, Boston, Mass.—*Picture Frame.*—April 24, 1866.—A single piece of glass forms the frame and the surface to receive the picture.

Claim.—A picture frame and service plate made of one piece of glass, as a new and improved article of manufacture, substantially as described.

No. 54,209.—BENJAMIN ROBERTS, Highland, N. Y.—*Hay Press.*—April 24, 1866.—The follower is moved up to the hay by extension levers. The windlass is arranged at a distance to reduce the height of the machine. The press box is opened by the rolling off of its cover. The sides are fastened by self-locking bails.

Claim.—First, the arrangement of the series of levers, E E F F, frame A A *c c c c*, pulleys *d d d d*, rollers *a a*, follower beams D′ D′, and endless rope or chain *b b b b*, substantially in the manner and for the purpose described.

Second, the manner of arranging the cover C, in combination with the manner of suspending it from rollers *g′ g′*, substantially as described.

Third, the spring loops *l l*, on the frame A, in combination with the hooked bail G, so applied as to receive the ends of the battens B′ B′, and to sustain the door B against outward pressure.

Fourth, the hooked bail G, pivoted to plates *h h*, in combination with loop holders *l l′*, which act upon the bails forward of their fulcra, substantially as described.

No. 54,210.—DANIEL T. ROBINSON, Boston, Mass.—*Machine for Cutting Tobacco.*—April 24, 1866.—The knife is pivoted at one end to the lever, and at the other end by a link to the standard, which gives it a "draw" cut.

Claim.—The combination and arrangement of the standard A, lever B, arm *d*, and cutter C, substantially in manner and to operate as before described.

No. 54,211.—THOMAS W. ROYS and G. A. LILLIENDAHL, New York, N. Y.—*Rocket Harpoon.*—April 24, 1866.—This bomb lance has an explosive shell at its head, and is propelled by a rocket charge after being fired from a gun. The hinged barbs are secured to the breech piece in the tube, and the line connected by a looped shank.

Claim.—First, in combination with the stock G, the rocket B, the shank C, and barbs E, substantially as shown and described.

Second, in combination with the breech or stock of the rocket the bow or loop shank, substantially as described.

Third, in combination with the stock or breech of the rocket, the barbs to secure the harpoon in the whale without regard to the number thereof.

No. 54,212.—STEPHEN P. RUGGLES, Boston, Mass.—*Shaft Coupling.*—April 24, 1866.—The ends of the shafts are grasped between the portions of the box which have differential screw holes traversed by corresponding screws on a single bolt, which draws the halves together as it is rotated.

Claim.—A shaft coupling made in two parts and held together and to the ends of the shaft by a differential screw-bolt and screw threads in said parts and by a key, substantially as and for the purpose described.

No. 54,213.—C. RUNDELL, Chicago, Ill.—*Hay and Straw Stacker.*—April 24, 1866.—The screw standard is steadied by guys, and has a revolving reel with running cord and pulleys.

Claim.—First, the employment of the screw elevator for the purpose of raising the frame or standard in the mow or stack, in stacking hay, grain, or straw, in the manner substantially set forth.

Second, the screw and standard, or its equivalent, when arranged and operated conjointly, in the manner and for the purpose set forth.

Third, the reel, connected with the pole or standard, substantially as and for the purpose specified.

Fourth, the pulley, sheaves, and standard, with the run cord and pulley constructed so as to operate conjointly, as and for the purpose herein described.

No. 54,214.—SILAS C. SALISBURY, New York, N. Y.—*Retort for Generating Gases from Oils.*—April 24, 1866.—Each retort in the series consists of two perforated tubes; the inner one is supplied with oil, the outer one with water and air if desired. Fire being applied, the associated vapors pass through the orifices to the fire.

Claim.—First, the application and use, for heating purposes, of the gases derived from oil, water, and air, or from oil and water combined, substantially as described, in combination with the gases produced from the fire of any ordinary furnace, for the purposes set forth.

Second, the construction and arrangement of the retort A, substantially as described, for generating and combining the gases of oil, water, and air, for the purposes set forth.

Third, the combination of a retort for generating such gases from oil, water, and air, or from oil and water, with the furnace or fire box in which such gases are to be burned, when such retort is placed in and heated by such furnace.

No. 54,215.—SILAS C. SALISBURY, New York, N. Y.—*Blast Furnace.*—April 24, 1866; antedated April 19, 1866.—The vapor from lime water and that from petroleum are associated with a hot-air blast in the furnace.

Claim.—First, the application and use in blast furnaces of a blast or current of the combined gases of oil, water, and air, combined substantially as described, applied and used substantially as and for the purposes set forth.

Second, the application and use, in such furnaces, of a blast or current of highly heated lime water vapor, substantially as and for the purposes set forth.

No. 54,216.—SILAS C. SALISBURY, New York, N. Y.—*Apparatus for Applying Oil and Water to assist in the Combustion of Coal, &c.*—April 24, 1866; antedated April 10, 1866.—Perforated pipes, respectively supplied with oil and water, enter the retort and the resulting vapors mix with the air therein and exude at the orifices in the retort.

Claim.—First, the construction and arrangement of the tubular retort A, composed of an inner and outer perforated tube, substantially as and for the purposes set forth.

Second, the combination of a series of retorts, so constructed, for use and application in furnaces in the place of ordinary grate bars.

Third, the combination of a retort, so constructed, with an oil and water reservoir or supply, and an air blast, for the purposes set forth.

No. 54,217.—JAMES F. SARGENT, South Strafford, Vt.—*Chair.*—April 24, 1866.—The tilting chair is locked in the required position by the engagement of the spring catch on the frame in one of the series of holes in the chair plate.

Claim.—First, the combination of the plate B, seat A, catch D, or its equivalent, and supports C C, substantially as specified.

Second, the foot rest E, in combination with the seat A, of a chair, so arranged that its inclination may be regulated as desired.

No. 54,218.—H. A. SCHESCH, Brooklyn, N. Y.—*Apparatus for Distilling.*—April 24, 1866.—An auxiliary fire near the top of the still.

Claim.—Exposing the upper part or vapor space of a still to the action of an additional fire, built in a secondary fireplace, substantially in the manner and for the purposes set forth.

No. 54,219.—Peter Schmitt and Peter Jacob Schmitt, Waterloo, Ill.—*Grain Drill.*—April 24, 1866.—The discharge holes are regulated in size without emptying the grain box. The draught bars of the shoe hangers rest at their forward ends on a transverse bar.

Claim.—First, the two perforated plates E E′, with levers G G′ attached, in connection with the wheel H, provided with the arm I, regulating or adjusting screw L, and the bar J, connected with the shoe-lifting bar K, all arranged to operate in the manner substantially as and for the purpose set forth.

Second, the attaching of the shoe hangers X, to the front part of the frame A, by having said hangers notched at their front ends and fitted on a rod Y, which is secured to the under side of the front bar of the frame A, by hooks *j*, substantially as shown and described.

No. 54,220.—J. Adam Schule, New York, N. Y.—*Motive Power.*—April 24, 1866.—The circular series of weights acts as a fly wheel.

Claim.—The centrifugal weights *c*, in combination with the shaft *a*, cog wheel *k*, clutch *l*, cog wheel *n*, and shaft or axle *o*, all constructed and operating substantially as and for the purpose described.

No. 54,221.—John M. Scudder, Cincinnati, Ohio.—*Disinfecting Apparatus.*—April 24, 1866.—The steam from the portable generator is ejected across the orifice of the reservoir containing the disinfecting solution which is raised by and disseminated with the steam.

Claim.—The disinfecting apparatus, consisting of the atomizer C D E F I J, and a portable steam generator, substantially as set forth.

No. 54,222.—James M. Seymour, Newark, N. J.—*Machine for Tenoning Blind Slats.*—April 24, 1866.—The slat is placed in a holder and passed horizontally over the cutters and back again to remove the burr.

Claim.—Passing a slat or lath horizontally around the cutters, substantially as described, for the purpose herein above specified.

No. 54,223.—James Shepard, Bristol, Conn.—*Meat and Vegetable Cutter.*—April 24, 1866.—Circular knives rotate freely on the shaft, which has a handle attached.

Claim.—First, the circular knives or cutters A A, mounted on a shaft B, and operating substantially as specified, or any number of cutters operating in the same manner.

Second, the combination and arrangement of the knives or cutters A, shaft B, shank C, with its arms *a a*, and handle D, as herein specified.

No. 54,224.—Gibson Simonson, Mount Carmel, Ind.—*Steam Plough.*—April 24, 1866.—The steam engine is mounted upon the frame which is supported by rollers. The devices refer to means for stopping, starting, and changing the course of the machine, and lowering and raising the ploughs.

Claim.—First, the driving pulley T, slack belt *b*, and pulley V, in combination with the idler Z, under control of the operator, for starting and stopping the traction wheel of a steam ploughing machine.

Second, the arrangement of swiveled and internally-geared guide wheel D K, capable of being brought into connection with the motor by means of the tiller I, so as to enable the turning of the machine to the right or left by power under the control of the operator.

Third, the gravitating plough frame J, capable of being set in or out of pitch by means of the swivelled and adjustable joint K L.

Fourth, the devices M N P *p* for the suspension and adjustment of the ploughs relatively to the main frame.

Fifth, the arrangement of vibrating shaft *l*, lever *p′*, scalloped pulley *q q′*, pulleys *r s* and *u*, shaft *i* and chain *t*, or their equivalents, for unearthing the gang of ploughs in the manner explained.

No. 54,225.—Hiram Moore Smith, Richmond, Va.—*Water Elevator.*—April 24, 1866.—A pawl operating within the end of the drum operates as a brake on its exterior when the lever is reversed.

Claim.—The combination and arrangement of pawl and brake E F^4, brake and ratchet wheel D, and crank G, as and for the purpose described.

No. 54,226.—John Y. Smith, Alexandria, Va., assignor to himself and Herman Haupt, Philadelphia, Penn.—*Rock Drill.*—April 24, 1866.—Melted steel to form wings is cast around the white-hot end of the drill stock.

Claim.—First, the construction of a drill or reamer or kindred implement of any form bearing a wrought-iron stem, combined with steel bits or cutting edges, by casting the steel which forms the bits or cutting part of the drill around the wrought-iron stem when at a white or welding heat, as and for the purposes herein set forth.

Second, in combination with a drill or kindred tool of otherwise ordinary or suitable construction, the wings formed with deflecting surfaces at their upper ends, as and for the purposes herein set forth.

No. 54,227.—JOSHUA B. SMYTH, Philadelphia, Penn.—*Car Spring.*—April 24, 1866; antedated January 30, 1866.—The sets of steel plates rest in the steps of the common fulcrum and are successively brought into action.

Claim.—Combining a series of steel springs, whether composed of one or more plates, and so supporting them at their ends that they shall be in no part in contact with one another when without a load, and so arranging them that they shall successively be brought into action with the increase of the load, substantially in the manner and for the purpose set forth.

No. 54,228.—E. R. SPEAR and W. P. SPEAR, Orland, Ind.—*Horse Rake.*—April 24, 1866.—The rake is tripped to discharge its load by the compound lever which brings a pressure on the rake teeth forward of the head, and relieves the pressure on the rear.

Claim.—The arrangement and combination of the levers L L, connecting rods K K, draught arms G G, and spring bars J J, and their springs *f f*, with a revolving rake, substantially in the manner and for the purpose set forth.

No. 54,229.—WILLIAM J. TAIT, Bergen, N. J.—*Gauging Rod.*—April 24, 1866.—The sliding stop on the rod fits against the inside of the barrel and assists in reading the measurement on the scale.

Claim.—An improved gauging rod formed by combining the slide rod B, and stop G, with the ordinary gauging rod, substantially as described and for the purpose set forth.

No. 54,230.—EDWIN A. THOMAS, Philadelphia, Penn.—*Can for Caustic Alkali.*—April 24, 1866.—Explained by the claim.

Claim.—A can for putting up caustic alkalies, &c., the seams of which are secured by Thomas's patent cement, and the top or cover attached by rocking down the edges of said cover over the turned-out edge of the body of the filled can, substantially as described.

No. 54,231.—TOWER THOMASSON, Neoga, Ill.—*Evaporator.*—April 24, 1866.—On the furnace walls are rails upon which the series of pans traverse; as their contents condense they are wheeled to the rear and received on the platform.

Claim.—First, the provision in an evaporating apparatus of a train of portable and separate pans F F′ F″ F‴ F⁗, or their equivalents, adapted to be linked together and to be used in connection with the railway E′ E′, substantially as described.

Second, the evaporating pan F, when constructed with wooden ends G G′, metallic bottom K, and partially wooden and metallic sides H H′ and I I′, in the manner described.

Third, the hooks O and staples P, or devices substantially equivalent, for connecting a train of evaporator pans.

Fourth, in combination with the elements of the first and second claim, the receiving platform S, for the purpose described.

No. 54,232.—TIMOTHY TUFTS, Somerville, Mass., assignor to PERSON DAVIS, same place, and J. ALBERT TAYLOR, of Boston, Mass.—*Tree Protector.*—April 24, 1866.—The annular trough is supported by fastenings which penetrate the tree, and the intervening space is packed.

Claim.—The combination and arrangement of the series of supporting nails D, and their screws *e*, and nuts *f*, with the annular trough and its projections *d*, or the equivalent thereof, or with the same and the annular packing E, arranged about the trunk of a tree, substantially as specified.

No. 54,233.—WILLIAM VAN DE SANDE, New York, N. Y.—*Heating Stove.*—April 24, 1866.—The fire pot is supported on a central pivot in the brace above, and is so connected to the grate by a lever as to move simultaneously therewith but in an opposite direction.

Claim.—The movable fire pot or cylinder C, the lever L, and movable grate H, when in combination with a coal stove A, operating in the manner substantially as and for the purposes described.

No. 54,234.—ALEXANDER T. WATSON, New York, N. Y.—*Railroad Car Spring.*—April 24, 1866.—The curved springs rest in recesses on the upper and lower bearing plates, and expand outwardly under pressure.

Claim.—First, the peculiar construction and adaptation of the sockets or grooved recesses *b b*, in which the extremities of the plates or leaves are set together, with the flange or side guards *a a*, by which the free action of the ends of the plates is permitted, and they are at the same time held in their proper positions, substantially as described.

Second, the plates or leaves constructed substantially as described, and the cutting or fixing the extreme or end curves at such a point, and so combining and arranging the curves with each other, that when under pressure the elastic action of the plates is outward, and the curves of the plates, except at the ends, are caused to straighten, whereby the liability to fracture or collapse is greatly diminished.

No. 54,235.—GEORGE WELLHOUSE, Akron, Ohio.—*Harvester Rake.*—April 24, 1866.—The head of the vibrating sweep rake is partially rotated to throw the teeth up through the slots to remove the grain and recline them during the return stroke. The rake is operated by lever and connecting rod, and the grain received against a guard at the inner end of the platform.

Claim.—First, giving the rotary motion to the vibrating sweep-rake, by means of the arm G, and the universal joint at the rear of the rake, substantially in the manner and for the purposes set forth.

Second, the arrangement and combination of the lever H, the connecting rod I, and sweeping rake handle, substantially as described.

Third, the arrangement and combination of the grain guard L, the rod M, and lever H, substantially as set forth.

No. 54,236.—J. W. WETMORE, Erie, Penn —*Railroad Chair.*—April 24, 1866.—The chair has one jaw to hold one lower flange of the rail, and another jaw to hold the wedge and auxiliary jaw which embraces the other flange of the rail.

Claim.—A railroad chair, constructed of a bed piece, Fig. 2, which has one jaw to hold the rail, and one in two parts to hold a wedge, and which has also a recess *g g*, in which the jaws, Fig. 3, are applied to the rail, and held in place by the wedge, with its key *s* and groove *r r'*, both the fixed and adjustable jaws being held by rivets passing through the notches of the rails, all substantially as described.

No. 54,237.—C. O. WHEELER, Matteson, Ill.—*Car Coupling.*—April 24, 1866.—Spring hooks on the sides of the draw-heads move in a horizontal plane, and automatically engage with pins on the opposite draw-head.

Claim.—The hooks B B, arranged with the springs D, in combination with the draw-pins C, said parts being applied to the draw-heads, having central extra mouths *a*, and all arranged substantially in the manner and for the purpose herein set forth.

No. 54,238.—JAMES WIDNEY, Carlisle, Penn.—*Car Coupling.*—April 24, 1866.—The pin is irremovable, the bulb on the bottom and the riveted pieces on the top being larger than the width of the slot. The abutment is removable, and when in place limits the penetration of the link.

Claim.—First, a coupling pin for railroad cars, constructed as described for the purpose set forth.

Second, providing the buffer with a removable abutment A', substantially as and for the purpose described.

No. 54,239.—JOHN H. WILHELM and JAMES W. LARIMORE, Chicago, Ill.—*Lamp Chimney Lifter.*—April 24, 1866.—Spring jaws clasp the chimney by its bulb.

Claim.—The hands A A secured to the arms B B, when said hands are provided with fingers 1 2 3 4 5, so arranged that the chimney is securely held in said hands and between said fingers in the vertical position in which it is grasped, substantially as herein specified.

No. 54,240.—IRA E. WILSON and JOHN LOWE, Providence, R. I —*Eyelet Machine.*—April 24, 1866.—The dies are cooled and the small disk out of the centre of the eyelet removed from the punch by a stream of water.

Claim.—The forcible introduction into and application to eyelet machines of one or more blasts, or currents of air, or streams of water, or of such other fluid, under a sufficient pressure as will accomplish the above described purposes, substantially in the mode above described and for the purposes indicated.

No. 54,241.—GEORGE WOLF, Williamsport, Md.—*Animal Trap.*—April 24, 1866.—Pressure upon the platform depresses the rod and detaches the loop of the cord which sustains the door.

Claim.—The above described trap provided with the wire G, and the eye of the cord D, or with the equivalent of these devices, (dependent upon friction alone,) for holding the trip E, substantially as described.

No. 54,242.—T. J. WRANGHAM, Benson, Vt.—*Well Windlass.*—April 24, 1866.—The inner ratchet wheel is loose on the shaft; the outer one and the drum are fixed; the handle is pivoted to the inner wheel and revolves the shaft by a pawl engagement with the outer wheel. While the bucket descends the inner wheel is locked, the outer freed, and the eccentric on the handle brought into frictional contact with the drum.

Claim.—The arrangement of the fixed and loose ratchet wheels *j l*, fixed drum *h*, and crank arm, all attached to the windlass shaft of a well curb, as and for the purpose specified.

No. 54,243.—RICHARD YIELDING, Ypsilanti, Mich., assignor to himself and HENRY GAGE.—*Apparatus for Burning Tar.*—April 24, 1866.—The vessel has non-conducting walls and a valved follower actuated by a spring, for ejecting the contents by a pipe to the retort.

Claim.—First, a reservoir for fuel composed of tar, pitch or rosin, mixed with oil or tar alone,

with its packed cone having a feeding valve F contained in a chamber or case A of non-conductive material, and having a tube or tubes furnished with regulating stop cocks for the purpose of ejecting the fuel in jets to be ignited, as hereinbefore set forth.

Second, the reservoir B with its component parts, and the tube or tubes K in combination with the retort L and the sleeve M, for the purpose and substantially in the manner set forth.

No. 54,244.—CHARLES K. BROWN and WILLIAM WRIGHT, Troy, N. Y., assignors to CHARLES K. BROWN.—*Paper Collar Machine.*—April 24, 1866.—The shaped collar is conducted horizontally against guides, then passed between a grooved and an edged roller upon the line of fold; it passes thence between two hemispherical rollers, a knife occupying the inside of the fold, which is left flaring, and the collar curved in the direction of its length.

Claim.—A combination of two rotary creasing or folding wheels, and a device substantially such as herein described, for supporting and guiding a collar or a similar article in a curved course while being passed endwise between the said creasing or folding wheels, whereby collars or similar articles can be creased, folded or partly folded progressively from end to end in a curved line, substantially as herein described.

Also, a combination of two rotary creasing or folding wheels, a device for supporting and guiding a collar or similar article in a curved course while being passed endwise between the said creasing or folding wheels, and an additional folding or pressing mechanism, whereby collars or similar articles can have a crease, fold, or partial fold made therein, progressively from end to end in a curved line, and also have such crease, fold, or partial fold increased, pressed, or finished progressively from one end to the other, all at a continuous operation, substantially as herein described.

Also, the combination of a yielding edge pressure G, curved pattern edge guide D, side support C, or side supports C C′, and creasing or folding wheels A B, either with or without an additional folding or pressing mechanism, substantially as herein described.

Also, the combination of two creasing or folding wheels A B, and two folding or pressing rollers F F′, arranged so as to revolve in a plane perpendicular, or nearly so, to that in which the said creasing or folding wheels turn, and furnished with inner and outer guides between the said wheels and rollers, substantially as described.

Also, the combination of a rotary guide I, and a grooved or flaring guide H, with two rotary rollers F F′, substantially as herein described.

No. 54,245.—THOMAS S. BROWN, Poughkeepsie, N. Y., assignor to himself and JOHN P. ADRIANCE, same place.—*Seat for Harvesters, &c.*—April 24, 1866.—Explained by the claim.

Claim.—Constructing the support B of rider's seat for harvesters, mowing machines, and other agricultural implements; a spring bar or plate twisted in such a manner that the support will yield or give in two different planes at right angles with each other, and admit of the yielding of the seat in any direction, substantially as set forth.

No. 54,246.—N. B. BROWN, Antwerp, N. Y., assignor to himself and ELBRIDGE SIMS, same place.—*Device for Lubricating Carriage Axles.*—April 24, 1866.—The depression of the spring valve allows oil to flow from the reservoir to the axle.

Claim.—The spring valve *a* in combination with the slotted receiver A, applied and operating as described.

No. 54,247.—JOHN N. DENNISON, Newark, N. J., assignor to himself, FRANCIS H. GOULD, and ROSCOE J. GOULD, same place.—*Fire Engine and Pump.*—April 24, 1866.—Two pistons of varying sizes are connected to one piston rod; the valve connections are such that either or both pistons may be made efficient to vary the amount of water thrown.

Claim.—First, the arrangement of the cylinders B C, constructed as described within the valve chamber A, stop cocks *l m n′*, partition *c*, and pipe *n′*, operating in the manner and for the purpose herein specified.

Second, the valves or stop cocks *l n* in combination with the pistons D E, chamber A, and partitions *a b*, constructed and operating substantially as and for the purpose set forth.

No. 54,248.—NELSON P. EDDY, Fall River, Mass., assignor to himself and WILLIAM M. HAWES, same place.—*Machine Drill.*—April 24, 1866.—The table has a motion in a vertical plane to vary its angle of presentation to the vertical tool.

Claim.—Combining with a machine drill a feed table, constructed and operating substantially as described, for the purposes specified.

No. 54,249.—DANIEL P. FARNHAM, Rock county, Wis., assignor to himself and MOSES P. FARNHAM, same place.—*Broom.*—April 24, 1866.—The jaws, when filled, are collapsed by being drawn into the cap, and are retained by a spring catch.

Claim.—Elastic wire jaws D and D′ attached to the handle, substantially as described, and operated by a looped lever F, and auxiliary rings E and E, in combination with the socket B, handle A, and spring catch C, or its equivalent, when the whole are constructed, arranged, and used, substantially as and for the purposes described.

No. 54,250.—G. L. HOLT, Springfield, Mass., assignor to himself and J. M. THOMPSON, 2d, same place.—*Oil Can.*—April 24, 1866.—A cup around the base of the spout collects the drip and returns it by pipes to the reservoir; a valve closes the return pipes when the oiler is in use.

Claim.—The arrangement of the cup *a*, having connecting tubes *b*, and ball and socket valve *g*, in combination with an oil can, operating substantially as and for the purpose specified.

No. 54,251.—JOB JOHNSON and HEZEKIAH HOWARTH, Brooklyn, N. Y., assignors to JOB JOHNSON.—*Fish-hook.*—April 24, 1866.—The shank is prolonged into a spring loop with a barbed spear, which is disengaged and projected by the bite of the fish.

Claim.—The spear connected to the line, in combination with the spring and with the hook, substantially as specified, whereby the spring causes the hook and spear to come towards each other when the fish bites at the bait, as set forth.

No 54,252.—G. H. KNIGHT and F. MILLWARD, Cincinnati, Ohio, assignors to G. H. KNIGHT, same place.—*Sirup Fount or Cup.*—April 24, 1866.—The sirup is discharged at the spout by a plunger; the latter is returned by a spring to draw back the contents of the spout.

Claim.—First, a sirup fount having the following elements, to wit, a containing vessel whose spout communicates at or near its bottom, a plunger or piston, and a retracting spring or its equivalent.

Second, in combination with the elements of the preceding clause, a vertically reciprocating and submerged disk or plunger, whose descending stroke terminates at or near the bottom of the vessel, substantially as set forth.

Third, in combination with the elements of the two foregoing clauses, an enlargement of the vessel, or equivalent device, at or near the upper position of the plunger, for the purpose explained.

No. 54,253.—WILSON W. KNOWLES, Southington, Conn., assignor to himself, JULIUS B. SAVAGE, and WILLIS B. SMITH, same place.—*Carrige Shackle.*—April 24, 1866.—The clip bar is held within a dovetail groove in the shackle while being heated and welded.

Claim.—Constructing the shackle to receive the clip bar, substantially as and for the purpose herein set forth.

No. 54,254.—TIMOTHY J. POWERS, New York, N. Y., assignor to J. P. FITCH and J. R. VAN VECHTEN, same place.—*Method of Priming Metallic Cartridges.*—April 24, 1866.—The revolution of the concave disk ejects the semi-fluid fulminate into the annular recess in the shell.

Claim.—The employment for depositing the fulminate priming around the interior of a cartridge shell, of a spindle upon which the said priming is first placed, and the revolution of which throws the said priming directly into its place by centrifugal force, substantially as herein specified.

No. 54,255.—TIMOTHY J. POWERS, New York, N. Y., assignor to J. P. FITCH and J. R. VAN VECHTEN, same place.—*Machine for making Cartridge Cases.*—April 24, 1866.—The erect mandrels are arranged in a circle upon an intermittingly rotating table; the reciprocating dies operating in connection with the mandrels, draw the shells to the required size, length, and thickness, and remove the surplus metal from their ends.

Claim.—First, in a machine for drawing metallic cartridge shells or other similar articles of metal, the employment of several mandrels operating successively or in rotation in combination with one die or set of dies, substantially as and for the purpose herein described.

Second, the arrangement of the mandrel or mandrels in a machine for drawing cartridge shells or other similar articles in an upright position with the point upward, substantially as and for the purpose herein specified.

Third, the construction of a mandrel on which cartridge shells or other similar articles are to be drawn with a shoulder *c*, having a sharp cutting edge operating substantially as herein described, in combination with the drawing die or dies to cut off the waste metal from the edges of the shell or other article after the drawing operation is completed, substantially as herein set forth.

Fourth, the cylindrical cam H, having a groove *h* of the form herein described, operating in combination with a series of pins *d d* in the table D, which carries the drawing mandrels to produce the intermittent rotary movement of the said table, and to lock the table in fixed positions during the intermission in its rotary movement, substantially as herein set forth.

No. 54,256.—SILAS S. PUTNAM and LUCIUS H. DWELLEY, Dorchester, Mass., assignors to S. S. PUTNAM & CO., same place.—*Horseshoe Nail Machine.*—April 24, 1866.—The nail is fed into the machine by nippers, and is formed by spring hammers operating in pairs and arrested at a point behind which they are pivoted, where they are retained while the nail is being cut off.

Claim.—The adjustable feeding nippers *m n* operated by a mechanism, substantially as described, so as to carry the nail rod into the machine as set forth.

Also, in combination with the above, the dog *e'* on the shaft S, operating substantially as set forth.

Also, in machines for forging horseshoe and other wrought nails, cutting off the finished nail without moving the rod from its normal position, by a mechanism substantially as described.

Also, arresting the hammers automatically after a certain number of blows and retaining them open while the nail is being cut off and the rod fed into the machine by mechanism, substantially as described.

Also, the blocks *h* so hinged as to swing out on the pins *j* as centres, in combination with the set screws *g* and springs *e*, substantially as set forth.

Also, the furnace M in combination with the feeding nippers *m n* and hammers J K, operating substantially as set forth.

Also, the cutters T W in combination with the connecting rods *b'* and V, the lever Q and cam wheel R, operating substantially as described.

Also, the ring Y in combination with the hammers J K, frame X, connecting rod *m'*, lever Z, and cam wheel R, operating substantially as set forth.

Also, adjusting the nippers *m n* to the size of the rod, being operated upon by means of the set screw 20 and block 19, substantially as described.

No. 54,257.—GEORGE W. REMINGTON, North Providence, R. I., assignor to himself and GEORGE H. REMINGTON.—*Watch-key.*—April 24, 1866.—To avoid winding the arbor of the watch in the wrong direction, and also overwinding or straining, the ratchet and pawl arrangement only operates in one direction, and releasing springs are applied to the spindle.

Claim.—The combination with the key spindle A, having a loosely turning casing C, or its equivalent, operating upon its ratchet D by a spring pawl F, of one or more pressure springs so arranged upon it as to bear and operate upon the collar of its ratchet, substantially in the manner described and for the purpose specified.

Also, in combination with the above, the sliding collar M of the key spindle arranged with regard to the pressure springs *g g* thereof, so as to operate substantially as and for the purpose specified.

No. 54,258.—LEWIS SAUERS, Mount Joy, Penn., assignor to himself and H. SHAFFNER, same place.—*Furrowing Hammer.*—April 24, 1866.—The blades have a central hole for the reception of the handle, and are enclosed by a box whose sections have a diagonal junction.

Claim.—First, a series of bits or blades, 1, 2, 3, 4, or more, provided with a central hole D for the reception of a handle B, constructed in the manner and for the purpose specified.

Second, the diagonally joined box-plate A' A'' provided with three holes in combination with the blades 1, 2, 3, 4, shouldered handle iron B E, and wedge C, arranged in the manner and for the purpose specified.

No. 54,259.—LANGDON SAWYER, Springfield, Vt., assignor to BENJAMIN F. SAWYER.—*Mosquito Bar.*—April 24, 1866.—The netting is spread over the extensible frame, supported by an adjustable rod and post.

Claim.—First, the coiled spring *c*, in combination with the socket *b*, and the standard A A, combined and operating substantially as above described.

Second, the frame F, constructed as above set forth, composed of the centre bar *g*, with its loops *m m*, the transverse bars *i i*, with their loops or slots *l l l l*, the semicircular arms *j j*, with their loops or slots *k k k k*, and the spring *n*, combined with the extension bar *h*, and operating substantially as above set forth.

Third, the extension bar *h*, in combination with the frame F, constructed as above described and operating as above substantially set forth.

Fourth, the combination of the standard A A, the extension bar *h*, and the frame F, constructed substantially as above described, constituting a mosquito bar, as hereinbefore described.

No. 54,260.—THOMAS J. SLOAN, New York, N. Y., assignor to JOHN G. SLOAN, Paris, France.—*Grinding Mill.*—April 24, 1866.—The feeding device of toothed rollers and spring pressure bars has a lateral reciprocating motion. The grinding apparatus consists of two sets of saws of unequal diameters, equal axial velocity; the saws of one set are placed obliquely on their mandrel.

Claim.—First, the combination of the series of drunken saws for grinding, with the series of drunken saws for clearing, the two series being mounted on two shafts geared to rotate with equal velocity, and the series of clearing saws being of greater diameter than, and extending into, the spaces between the grinding saws, substantially as and for the purpose specified.

Second, the combination of the series of grinding saws with the feed roller, and the interposed rest bar and pressure plates, or the equivalent thereof, substantially as and for the purpose specified.

Third, in combination with a series of drunken or inclined saws for grinding as described, the means, or the equivalent thereof, for giving to the feeding mechanism a lateral reciprocating motion, for the purpose of presenting the material equally to all the saws as set forth.

No. 54,261.—Thomas J. Sloan, New York, N. Y., assignor to John G. Sloan, Paris, France.—*Grinding Mill.*—April 24, 1866.—The two shafts revolve at equal velocities; one carries saws and the other serrated disks of larger diameter. The teeth of the saws work between the disks to comminute the material fed from the reciprocating box.

Claim.—The combination of the series of clearing disks with the series of grinding or reducing saws when the periphery of the disks is made to travel faster than the periphery of the saws, substantially as and for the purpose described.

Also, giving to the feeder box a reciprocating motion, substantially as described, in combination with the series of circular saws set with their planes at right angles with their axis of rotation, and having spaces between them, substantially as and for the purpose specified.

No. 54,262.—Thomas J. Sloan, New York, N. Y., assignor to John G. Sloan, Paris, France.—*Grinding Mill.*—April 24, 1866.—The grain is held in the peripheral pockets of the roller, which is composed of associated disks and revolves at a slow speed, while the rapidly revolving saws penetrate the annular spaces between the disks to comminute the grain.

Claim.—The combination of the series of saws with the series of disks formed with recesses or buckets in their peripheries for carrying and holding the grain to and while it is subjected to the action of the saws, the saws rotating at a higher velocity than the disks, substantially as and for the purposes described.

Also, the hopper for supplying the grain to the buckets in the series of disks, in combination with the series of disks and the series of saws, substantially as and for the purpose described.

Also, in combination with the series of saws and with the series of disks constructing the lower part of the hopper with an overflow and inclined surface leading thereto, substantially as and for the purpose described.

No. 54,263.—Charles G. Stoll and William Stoll, East New York, N. Y., assignors to Charles G. Stoll, same place.—*Grain Separator.*—April 24, 1866.—The blast fan revolves in a closed box and delivers the air, free from dust, underneath the sieves.

Claim.—First, the combination of the sieve E with the closed box A and fan blower I, or other equivalent devices, substantially as described, so that the air forced into the said box has no way of escape except through the apertures in the sieve, and it is compelled to act on the material placed on said sieve with its full force.

Second, the yielding spring valve *f*, in combination with the long, narrow discharge opening in the bottom of the hopper, and with the sieve E, constructed and operating substantially as and for the purpose set forth

Third, the closed box J, to which the air has access from below, in combination with the fan I, box A, and sieve E, constructed and operating substantially as and for the purpose described.

Fourth, the adjustable valve or partitions *r*, in the compartments *q* of the box A, in combination with the sieve E, constructed and operating substantially as and for the purpose set forth.

Fifth, the air valve *v v* in the bottom of the box A, in combination with the blower and sieve, constructed and operating substantially as and for the purpose described.

No. 54,264.—William B. Tilton, New York, N. Y., assignor to W. Nash, same place.—*Banjo.*—April 24, 1866.—The rings on which the head is stretched are adjustable as to relative distance and slip within the rim where the lower one is secured.

Claim.—Securing the parchment head to and within the cylinder or rim of a banjo or other similar musical instrument, by means of two annular rings B and C, when arranged together and with regard to the parchment head and the banjo rim, so as to operate substantially in the manner described and for the purpose specified.

Also, so arranging and securing the ring C, to which the parchment head is fastened within the banjo rim, that it can be adjusted in position, substantially as and for the purpose described.

No. 54,265.—James M. White, Springfield, Ohio, assignor to self and David King, same place.—*Tuyere.*—April 24, 1866.—The blast-pipe and air chamber are divided horizontally and fastened by bolts. The deflector with a central depression is supported on legs and guides the air in a thin annular stratum to the exit.

Claim.—The peculiar arrangement of tuyere for blacksmiths' forges, consisting of two parts A and B, united by the bolts E, and having the hemispherical cap F, resting upon legs D, permanently attached to it, which legs rest upon the bottom piece B, which has also a slide C in the bottom, the several parts being constructed and arranged substantially as and for the purpose set forth.

No. 54,266.—Charles H. Wing, Newton Corner, Mass., assignor to The American Magnesium Company, Boston, Mass.—*Method of Preparing Magnesium for Burning.*—April 24, 1866.—The coil may be supported on a horizontal wire while burning.

Claim.—The forming of magnesium wire or ribbon into the spiral coils herein described.

No. 54,267.—John Fordred, Blackheath, England.—*Method of Purifying Hydrocarbon Oils.*—April 24, 1866.—Caustic alkali as a substitute for sulphuric acid in the preliminary process of purification.

Claim.—The employment of a solution of caustic soda or potash as a preliminary treatment or process of purification of the crude or of the distilled oils or hydrocarbons resulting from the distillation of coal, shale, or peat at a low temperature.

No. 54,268.—A. D. LAGOGUEY, Paris, France.—*Mode of Ventilating Millstones.*—April 24, 1866.—Air is introduced through an annular duct around the feed tube into an air chamber, bounded by two cones, and thence by ducts and a spout to the space between the stones.

Claim.—The combination of the two cones M N, air-conducting box P, spouts P′ P′, pipes T S, and stuffing boxes Q R, the whole arranged in relation with each other and applied to a pair of millstones, substantially as and for the purpose herein specified.

No. 54,269.—J. MATHIS DORNBIRN, Austria, assignor to H. KAYSER, New York, N. Y.—*Roller Temple for Looms.*—April 24, 1866; Austrian patent, March 14, 1861.—By means of the adjustably oblique position of the toothed rollers, their eccentric support and independent motion, the strain on the cloth is adjusted and inequalities in the tension rendered observable.

Claim.—First, a temple composed of a series of wheels *a*, set in an oblique position, substantially as and for the purpose herein shown and described.

Second, the eccentric shoulders *c*, and the disks *d*, which separate the oblique wheels *a*, substantially as and for the purpose set forth.

No. 54,270.—WILLIAM TURNER, SAMUEL SHORE, and WILLIAM HALLIWELL, Rochdale, England.—*Card for Carding Machines.*—April 24, 1866.—The object is to dispense with grinding the teeth and check the formation and collection of waste.

Claim.—In tooth and stapler cards used in carding machines, the system of making the prongs or legs of each staple or tooth of different lengths.

No. 54,271.—STANISLAS VIGOUREUX, Paris, France.—*Method of Preparing Threads for Parti-colored Printing and for Properly Weaving the same.*—April 24, 1866.—The warp threads while adhering to a cloth are printed with a pattern, and are thus placed in a loom, where a reciprocating blade detaches the threads consecutively at the proper time to take their place in the fabric; the cloth is led off by a roller.

Claim.—The method herein described of preparing threads for parti-colored printing, and of retaining them in their proper relative position for weaving for the purpose of preventing the marring or disfiguring of designs or patterns.

No. 54,272.—J. P. ADAMS, Whitney's Point, N. Y.—*Butter Worker.*—May 1, 1866.—The bowl standard is pivoted to the post and the ladle hinged to the pendent arm.

Claim.—The arrangement of the frame D, pivoted at *b*, the rock shaft S, the arm M, and the swivel joint N, used with the bowl F, and its connections, substantially as and for the purpose herein specified.

No. 54,273.—HENRY C. AMMIDOWN, Southbridge, Mass.—*Joints of Spectacle Bows.*—May 1, 1866.—The set screw clamps the bezel and forms a pivot for the bow; the stops are within the perimeter of the joint, and do not nip the hair or expose sharp angles.

Claim.—A spectacle joint having a construction substantially as described.

No. 54,274.—FREDERICK ASHLEY, New York, N. Y.—*Meat Chopper.*—May 1, 1866.—The vibration of the spring beam of the chopper rotates the meat box.

Claim.—In combination with a suitable box or receptacle for the meat or other article to be chopped or cut, the swinging chopper or knife beam E, having arms L L^2, when so arranged and connected together that by the up and down movement of the said beam the said meat box will be rotated, substantially as described and for the purpose specified.

Also, the use of a spiral or other suitable spring connected with the chopper beam, as and for the purpose specified.

No. 54,275.—JOHN E. ATWOOD, Mansfield, Conn.—*Hangers for Shafting.*—May 1, 1866.—The box of the hanger is adjustable in any direction to bring the shaft into line. It is suspended from a screw rod which is vertically adjustable by the nut on the socket of the hanger. A disk in the oil cup below rotates in contact with the shaft and spring plungers wipe off the superfluity of oil.

Claim.—First, the disk *w*, applied to the head *i* of the screw C, and operating in connection with the ribs or feathers E E, to hold the said screw, substantially as herein set forth.

Second, the disk *v*, constructed and applied to the nut *u*, and operating in connection with the ribs or feathers E E, to hold the said nut, substantially as herein set forth.

Third, the shouldered annular disk *r r′*, constructed and applied to, and operating in connection with the shouldered nut *m n*, and ribs or feathers *h h*, substantially as herein set forth, for the purpose specified.

Fourth, the arms G, working in vertical grooves in the sides of the journal box so as to admit of the vertical adjustment of the said journal box, substantially as herein set forth for the purpose specified.

Fifth, the rotating feeding disk I, weighted levers J J, and wipers *j j*, arranged with reference to each other and with the oil vessel H and shaft B, substantially as herein set forth for the purpose specified.

No. 54,276.—Stephen L. Avery, Norwich, N. Y.—*Water Elevator.*—May 1, 1866.—The weight on the annular friction collar counterbalances the handle, which connects by a pawl with the ratchet wheel; the two parts of the drum are united by their central flanges; the valve in the bucket bottom is opened by an extensible rod dependent from the chain.

Claim.—First, the combination as herein described, of a weight F, with the rim of a loose annular friction collar E, when said collar is combined with a crank D and with the ratchet wheel of a windlass, substantially in the manner and for the purpose herein set forth.

Second, the combination of a central, circular, slotted washer K, with an annular friction brake and crank D′, and with a shaft A, substantially in the manner and for the purpose herein described.

Third, the metallic windlass drum, when said drum is composed of two sections G G, formed substantially as herein described, and united together and secured upon a shaft in the manner herein set forth.

Fourth, in combination with the valve M of a well bucket, a jointed connecting and lifting rod O, made substantially in the manner and for the purpose herein set forth.

No. 54,277.—Benjamin Bacon, Morrison, Ill.—*Clock Escapement.*—May 1, 1866.—The pallet is in two parts which have separate axes, point in the same direction, describe parallel arcs, and are connected by arms which have a rocking joint to secure coincident motion.

Claim.—The pallet above shown, consisting of two parts, each mounted on a different axis, and connected to each other by arms, jointed to each other, so that the motions of one of the parts are controlled by those of the other, substantially as described.

No. 54,278.—David Bannister, Philadelphia, Penn.—*Gas Pipe Tongs.*—May 1, 1866.—Hooks of varying sizes are linked to the depression in the lever.

Claim.—The lever A, with its hardened edge C, and notch D, in combination with the hook B, made in the manner and for the purpose specified.

No. 54,279.—Abraham Bare, Mexico, Ohio.—*Sorghum Funnel.*—May 1, 1866.—The lower end of the cylindrical portion and the corresponding part of the removable interior cup are respectively provided with strainers.

Claim.—First, a cylindro-conical funnel A B, which is constructed with a strainer *a*, applied at the junction of the cylinder with the cone, substantially in the manner described.

Second, the combination of the cylindro-conical funnel A B with a removable strainer *c*, substantially as described.

Third, the combination of a fixed or permanent strainer *a* with a removable strainer *c*, and a funnel, substantially as described.

No. 54,280.—Henry Barnes, Burlington, Wis.—*Cultivator.*—May 1, 1866.—The standards of the three shares are adjustably connected by clevises and stay rods to the cross-pieces of the frame to which the thills are attached.

Claim.—The combination and arrangement of the thills A, standards G H, cross-pieces C D, rods L M, and connecting bars O, constructed and employed in the manner and for the purposes specified.

No. 54,281.—S. W. Beach, Niles, Mich.—*Bed Bottom.*—May 1, 1866.—The bed bottom is mounted on levers whose lower ends project beneath a spring, arranged transversely of the bedstead, and with their fulcrums on transverse rods.

Claim.—First, the levers B B, in combination with the bed bottom *a b*, and spring C, substantially as specified.

Second, so mounting a bed bottom that the same will receive its necessary springing motion from a single spring C, arranged so as to operate substantially as specified.

No. 54,282.—Edmund Bigelow, Springfield, Mass.—*Measuring Faucet.*—May 1, 1866.—The liquid included between the valve and piston is drawn forward to the discharge opening, which is unstopped by the motion of the inner sleeve.

Claim.—First, the measuring chamber D, constructed of glass or other suitable non corrosive material, as described and constructed, fitted to the metal portion A of the measuring faucet, as herein specified.

Second, and, in combination therewith the valve F and piston E, arranged and operated substantially as and for the purposes specified.

Third, the head or cut-off G, when used in connection with the valve F and piston E, and arranged relatively with the opening *e* and vent *f*, in the part A of the faucet, to operate in the manner substantially as and for the purpose specified.

No. 54,283.—Byron Boardman, Norwich, Conn.—*Staple.*—May 1, 1866.—The form described increases its security in place.

Claim.—A staple provided with longitudinal grooves or corrugations in combination with transverse ribs elevated to about the same height above the body of the staple as are the corrugations, the whole being so shaped as to be capable of being formed by swaging machinery, for the purposes and substantially in the form above described.

No. 54,284.—Joseph Boggs, Harrisburg, Penn.—*Brush.*—May 1, 1866.—The bristles are clamped in a head, which is formed of a piece of sheet metal, shaped, punched, and folded to the required form.

Claim.—The brush head or body constructed of a piece of sheet metal cut and folded in the required form, substantially as shown and described.

No. 54,285.—George W. Boynton, Auburn, N. Y.—*Sheep Rack.*—May 1, 1866.—The weight of the sheep on the platform lifts the lid of the trough, and conversely.

Claim.—The combination of the bar *m*, the boards O and P, the slides *h*, the levers *e*, the rods *t*, and the lids C, the whole constructed and operating as and for the purpose herein specified.

No. 54,286.—Benjamin Bray, Methuen, Mass.—*Sash Fastener.*—May 1, 1866.—The spring catch on the frame engages the rack on the edge of the sash to hold the latter in any vertical position.

Claim.—The combination of the triangular toothed rack, the triangular toothed spring catch, and the locking device of the said catch, constructed, arranged, and applied to a window sash and frame, substantially in manner and for the purpose as herein before specified.

No. 54,287.—W. P. Brooks, Fairmount, Minn.—*Bag Fastener.*—May 1, 1866.—The perforated leather tag is riveted to the bag and the thong is rove through the holes so as to bind tightly.

Claim.—An improved bag fastener, constructed and arranged substantially as herein described and for the purpose set forth.

No. 54,288.—Harvey Brown, Chalfant, Ohio.—*Water Wheel.*—May 1, 1866.—The area of water induction openings is adjusted by the rotation of the ring, which is connected by gimbal joints to each of the pivoted valves; the buckets are semi-annular, receive water above, and discharge below, the central flange.

Claim.—First, a water wheel provided with semi-annular buckets *a*, arranged as shown, in connection with a series of chutes E, in the case D, which encompasses the wheel, substantially as described.

Second, operating, opening, and closing the gates F, by means of rods G, attached at their outer ends by gimbal or equivalent joints to crank rods secured to the outer ends of the buckets, and attached at their inner ends to a ring H, fitted loosely on the wheel shaft B, substantially as shown and described.

No. 54,289.—Asher Burr, Middletown, Conn.—*Pump.*—May 1, 1866.—The joints are constructed to dispense with bolts and permit the rotation of the pump to change the presentation of the nozzle; the standard of the handle is adjustable on the rim of the cylinder.

Claim.—First, the self-packing joint produced by the construction and arrangement of three notches D, with their inclines C, and the inclined flange *c* upon the one part, and corresponding projections E upon the other part, substantially as specified.

Second, the combination of the valve seat G, the base A, and cylinder B, when constructed and joined together, substantially in the manner and for the purposes herein specified.

Third, combination of the yoke I with the valve H and seat G, substantially in the manner and for the purpose set forth.

Fourth, the lips T T, and tongue U, operating substantially in the manner and for the purpose described.

No. 54,290.—Robert B. Butler, Allentown, Penn.—*Wrench.*—May 1, 1866.—The threaded shanks of the respective jaws slip past each other and are moved simultaneously in opposite directions by the revolution of the internally threaded socket.

Claim.—The two bars C F, having jaws upon each end and their corners or edges notched or toothed, in combination with the hollow wrench handle having a spiral screw thread and parallel longitudinal grooves *a* upon its inside, when arranged together and so as to operate substantially in the manner described and for the purpose specified.

No. 54,291.—Adam S. Cameron, New York, N. Y.—*Pump.*—May 1, 1866.—The valves are placed between the cylinders and are common to each; one piston is operated by power, the other by hand, and the lever which works the latter has its fulcrum on the cross-head through which the power piston rod operates.

Claim.—First, the combination of a steam or power pump and an independently operating hand pump, with one set of valves, which is common to both pumps and capable of operating with either, as may be required, substantially as herein specified.

Second, in combination with a power pump and a separate hand pump having one set of valves common to both, a cross-head, which serves both the purpose of holding the power pump piston stationary and of a support for the fulcrum of the hand-pump lever when the latter pump is at work, substantially as herein described.

No. 54,292.—SAMUEL A. CANFIELD, Carlstadt, N. J.—*Bed Bottom.*—May 1, 1866.—The longitudinal slats are kept in place by transverse rods and rest upon elastic bands which are supported upon the head and foot rail brackets.

Claim.—The combination of the crank-shaped rods *g g*, and guard ropes *h h*, with the elastic bands D D, and recessed brackets *c c*, substantially as and for the purpose herein specified.

No. 54,293.—NATHAN B. CARR, Madison, Wis.—*Sugar-cane Mill.*—May 1, 1866.—The upper roller has its bearings in levers, whose fulcrums are stirrups attached to the frame, and whose extended arms are weighted, to give the required pressure.

Claim.—Providing the levers E, which have suitable boxes for the journals of the roller B, with an oscillating fulcrum, substantially as and for the purposes herein specified.

Also, the arrangement of the roller B, the levers E, the oscillating fulcrums F, and frame A, when constructed and operating substantially in the manner and for the purposes described.

No. 54,294.—C. L. CARTER, Union City, Ind.—*Harvester Rake.*—May 1, 1866.—The vibrating automatic rake is suspended over the platform, and operated by connection with a wrist on the driving wheel.

Claim.—The arrangement of the pendent bar H, bar I, bar E, crank *c*, shaft J, crank *d*, rod *e*, and wheel B′, operating in the manner and for the purpose herein specified.

Also, the arrangement of the bar I and N, bar E, arm M, cord *g*, pendent bar H, bar L, and rake K, constructed and operating in the manner and for the purpose herein specified.

No. 54,295.—JOHN CARTER, Philadelphia, Penn.—*Packing for Pump Pistons.*—May 1, 1866.—The flexible exterior packing is expanded by the taper wedge which slips on the conical body when the nuts are tightened.

Claim.—The expanding packing H, and wedge E, upon the conical body C, all combined and arranged substantially as described.

No. 54,296.—LEWSON E. CHASE, Charlestown, Mass., assignor to CHASE & CO., Boston, Mass.—*Confectionery.*—May 1, 1866.—Five per cent. of glycerine is added to the sugar and gum, or other ingredient.

Claim.—The use or employment of glycerine in the manufacture of confectionery, substantially as and for the purpose set forth.

No. 54,297.—CHARLES CLAUDE, New York, N. Y.—*Lock.*—May 1, 1866.—The hinged bit in the end of the key assumes a rectangular position in the lock; the tubular key-hole is movable, and has an attached disk which carries a guard to tilt the bit of the key.

Claim.—The tube D, and disk or plate *g*, provided with a guard *h*, nose *i*, and stop pin *l*, in combination with the hinged bit of the key K, latch or bolt B, and one or more tumblers F, all constructed and operating substantially as and for the purpose set forth.

No. 54,298.—HENRY CLYMO, Galena, Ill.—*Harvester Rake.*—May 1, 1866.—The tilting, reciprocating rake arm has a counterbalance weight, which raises the rake on its return movement; the motion is effected by link connection to an endless belt, driven by changeable gearing

Claim.—First, the loaded or weighted rake arm J, placed on tube or rod G, so as to work or turn thereon in a vertical plane, and also to slide thereon horizontally, in connection with an endless band, guide strips *e e*, provided respectively with a notched flap and inclined plane, all arranged to operate substantially in the manner as and for the purpose set forth.

Second, the adjustable gears *r u*, in combination with the fixed gear *u*, for operating the endless band, or giving a reciprocating motion thereto, as set forth.

No. 54,299.—JAMES COOP, Pittsburg, Penn.—*Truss.*—May 1, 1866.—The pads are attached by flexible spiral springs to their standards, and the slides adjustably attached to the hoop by set screws.

Claim.—First, the arrangement of the flanged-headed standards *e e*, slide C, and set screws *d*, in combination with the hoop A, constructed in the manner and for the purpose herein specified.

Second, the helix springs *f f*, with their crowns fixed to points of the standards and their base ends hooked or secured to the pads in such a manner as to allow of rotative elasticity without rotative displacement of the pads, and when acting as elastic universal joints for supporting the pads, substantially in the manner and for the purpose set forth.

No. 54,300.—ROBERT CORNELIUS, Philadelphia, Penn.—*Pump for Deep Wells.*—May 1, 1866.—When the piston descends the sleeve valve rises and exposes the side ports in the tubular rod above the piston; when the latter rises the valve covers the lateral openings.

Claim.—First, a side valve adapted for the passage of the gas, in combination with the valve gear operated upon by or through the piston rod for opening and closing the passages of said valve, substantially as described.

Second, a slide valve opened and closed by projections on the barrel or chamber of the pump, substantially as described.

Third, the combination of the slide valve and the friction springs O O′, for operating the same, substantially as described.

No. 54,301.—Frank E. Darrow, Bristol, Conn.—*Manufacturing Dolls.*—May 1, 1866.—The raw hide is saturated with steam generated from a solution of caustic alkali, and is then pressed into form between dies.

Claim.—The process of saturating raw hide for forming it into a desired form or shape, substantially in the manner as and for the purpose described.

No 54,302.—Jacob S. Davis, La Porte, Ind.—*Grape Vine Protector.*—May 1, 1866 —The trellised sections are hinged to a central post, and expanded or closed as the weather may require.

Claim.—First, the arrangement of the wings A A, hinged as described to the upright B, when provided with suitable trellises H H, operating substantially as and for the purposes specified and shown.

Second, the combination of the wings A A, upright B, and sill D, arranged and operating as and for the purposes set forth.

Third, providing the wings A A, the movable trellises H H, for the purpose specified.

No. 54,303.—John A. Dean, Easton, Mass —*Extracting Oil from Leather, &c.*—May 1, 1866.—The greasy matters are extracted from leather scraps by boiling and skimming.

Claim.—The process of making the composition and the new combination of the materials above enumerated.

No. 54,304.—Honore De Lapaturelle, New York, N. Y.—*Medical Compound.*—May 1, 1866.—A prophylactic composed of Jamaica rum, phenic acid, oil of cinnamon, oil of camphor, sugar sirup, alcohol, and distilled water.

Claim.—A medical compound made of the ingredients hereinbefore specified.

No. 54,305.—William H. De Valin, Sacramento, Cal.—*Stop Cock.*—May 1, 1866.—The chamber in the spigot communicates with a space beneath ; the pressure of the liquid acts in concert with the spring to lift the spigot against its seat.

Claim.—First, in steam, water, or gas cocks, constructed and arranged substantially as herein described, the recess in the plug in combination with a chamber within the case but outside of the plug, so as to allow steam, water, or gas to pass through and press against the plug in such manner as to prevent leakage, as set forth.

Second, in combination with the recessed plug and outside chamber or the equivalent thereof, the employment of a spring to maintain the plug in position, when not under pressure.

Third, the combination of a recessed plug and outside chamber with an agitator fast to the plug and projecting into said chamber, as and for the purposes set forth.

No. 54,306.—Joseph Dietschy, Alton, Ill.—*Water and Wine Cooler.*—May 1, 1866.—A central perforated ice chamber, an annular space for wine bottles, and double walls filled with a non-conductor.

Claim.—A combined water and liquor cooler, constructed substantially as described with the parts A, B, C, and H.

No. 54,307.—John B. Dixon, Geneva, N. Y.—*Tile Kilns.*—May 1, 1866.—The heat is discharged near the ceiling of the kiln, descends among the tiles, and finds its exit by return flues to the chimney.

Claim.—The combination of the flues E, opening near the top of and within the kiln A, with the open floor C, and return flues F, connected with the chimney H, the whole being arranged and employed substantially as and for the purpose set forth.

No. 54,308.—John W. Dixon, Philadelphia, Penn.—*Paper Pulp.*—May 1, 1866.—The digester communicates by pipe with a tubular boiler, and the latter with a heater composed of a series of tubes in a casing communicating with a water chamber. Water escaping from the digester is ejected by the water wheel, and heats the incoming water during its passage through the heater.

Claim.—First, the combination of the wood and straw pulp digester, the water motor, and the force pump, whereby the escaping water under pressure forces fresh water in at the top.

Second, the combination of the digester A, the water motor, the pump, and the heater at K, whereby the escaping water both heats and forces in the fresh water.

Third, the combination of the digester A, the water motor, and pump, the heater K, and the heater E, whereby the escaping water forces in fresh water, which absorbs the heat from the escaping water, and is further heated before it enters the top of the digester.

No 54,309.—John W. Dixon, Philadelphia, Penn.—*Separating Fibres of Palm, Palmetto, &c., for the Manufacture of Paper Pulp.*—May 1, 1866.—Explained by the claim.

Claim.—First, the treatment of the palm, dwarf palm or palmetto, by highly heated water, under pressure in a close digester, substantially as above described, for preparing it for spinning or paper-making.

Second, the treatment of palm, dwarf palm or palmetto, by submitting it to a highly heated water, under pressure, in a closed digester, and then to the action of chlorine or chloride of lime to bleach it.

No. 54,310.—JAMES DODGE, Waterford, N. Y.—*Rolling, Shaping, and Forging File Blanks, Flyers, and other metallic articles of small dimensions.*—May 1, 1866.—The rolling and forging mechanisms are associated in one machine, and are governed in their rotation and reciprocation as to time and position.

Claim.—First, the novel combination in one machine of one or more pairs of jaws or levers containing dies and matrices with rollers for rolling and forging file blanks of any desired form, flyers, and other metallic articles, constructed and arranged for operation substantially as described.

Second, governing the rotation of the rollers and movement of the jaws, so as to stop and start such rotation and movement at any desired time or position by means of the apparatus described, or by other mechanical equivalents.

Third, the combination and use of the wedges and springs constructed and arranged as described, for regulating the distance of the rollers.

Fourth, the general construction and arrangement and combination of the apparatus for rolling, shaping, and forging file blanks, flyers, and other metallic articles of small dimensions, as hereinbefore described.

No. 54,311.—LEVI DODGE, Waterford, N. Y.—*Hammering Heads of Axes.*—May 1, 1866.—The pin forms the eye, the cheeks are swaged by the closing-in dies, and the pivoted hammer shapes the poll.

Claim.—First, the finishing of axes by the use of dies closing upon the cheeks and heads, in combination with a pin, the whole being constructed as described, and operating simultaneously to give the axe its ultimate form and smooth finish, substantially as set forth.

Second, the combination with the dies, constructed and arranged as described, of a yielding support or spring applied in the manner substantially as herein shown and set forth.

No. 54,312.—THOMAS H. DUNHAM, Boston, Mass.—*Carpet Wadding.*—May 1, 1866.—A woven fabric is attached to a sheet of damp pulp by passage between rollers.

Claim.—A wadding composed of a bat or layer of fibrous materials, and having either upon one or both of its sides a layer or sheet of paper, in which the exterior of the fibrous bat is embedded, while the paper is in the condition of partially hardened pulp, which adheres to the fibre, and holds it in place without the use of starch, paste, or adhesive gums.

No. 54,313.—AUGUSTUS R. EGBERT, Philadelphia, Penn.—*Buckle.*—May 1, 1866.—The shape gives strength and steadiness.

Claim.—The construction of the buckle with the extended angular ends and raised centre, as herein described, and for the purpose set forth.

No. 54,314.—WILLIAM S. FARMER, New York, N. Y.—*Seats and Backs for Chairs.*—May 1, 1866.—Perforated raw hide fills the panels in the seat and back.

Claim.—The employment of sheets of raw hide in the bottoms and backs of chairs, and other articles of furniture, for sitting and recumbent purposes, when perforated and embossed, substantially as herein set forth.

No. 54,315.—T. PHELON FISH, Litchfield, N. Y.—*Horse Hoe.*—May 1, 1866.—The side ploughs are adjusted towards and from the median line to vary the width of tilth.

Claim.—In combination with a central plough carried by and adjustable on the beam, the side ploughs carried by and made adjustable on a divided frame, which is also carried by and made adjustable on the beam, substantially as and for the purpose herein described.

No. 54,316.—JOHN FISHBAUGH, Tiffin, Ohio.—*Wood Bending Machine.*—May 1, 1866.—The wood is laid between blocks, attached by a flexible strap and pressure brought against its ends to spring it up a little; being then bent by drawing up the blocks against a pattern, the spring-up portion is first straightened, condensing the exterior fibres. The pattern is expanded by the vertical screw.

Claim.—First, shrinking and shortening all the fibres of a bar of wood by means of the devices which are used for clamping the pattern and wood upon the sill A, and the devices used for bending such bar about its pattern, substantially such as described.

Second, the method substantially as described of bending wood into curved forms, to wit, by first bowing or arching it, and thence bending it about the pattern in a converse direction to that in which it was first bent, or bowed, substantially as set forth.

Third, the construction and arrangement of the shouldered blocks C C, hooked screws *g g*, nuts *g' g'*, connecting strip F, having enlargements formed on its ends and the recessed sill A, all used together, substantially as described.

Fourth, so constructing the pattern and the follower and combining the same, that the expansion of the pattern is effected by the descent of the follower G, and its contraction insured by the ascent of the follower, substantially as described.

No. 54,317.—WILLIAM D. FISHER, Freeport, Ill.—*Cultivator.*—May 1, 1866.—The scrapers are attached by standards to a frame suspended beneath the axle, and are laterally and vertically adjustable.

Claim.—The arrangement and combination of the drops C, equalizer E, adjustable frame A, regulating lever G, and fenders J, when arranged as herein described, and for the purposes set forth.

No. 54,318.—BENAIAH FITTS, Newark, N. J.—*Boiler Tube.*—May 1, 1866.—The cup is placed beneath the end of the inner circulating tube to prevent the passage upward of the steam therein, in opposition to the downward current of water.

Claim.—The cap O over the end of the tube H, leaving openings P P, or other means substantially the same, for the purpose of allowing free egress of the water from within the tube, and at the same time prevent the steam formed under and around the end of the tube from passing into it, as set forth and described.

No. 54,319.—JAMES H. FLAGG, Perkinsville, Vt.—*Soapstone Stove.*—May 1, 1866.—The slabs of steatite are held together by tongues and grooves and angle irons; the plates are perforated for the insertion of the flues, which are tubes of steatite.

Claim.—First, the stove-pipe or flue bored out of a solid piece of soapstone, as and for the purpose herein described.

Second, in joining the panels and plates of stoves made of soapstone or other mineral substance, the use of angle irons B, constructed and applied substantially as described.

Third, securing linings in stoves by means of the irons which secure the outside plates and panels, the posts *a a* of such irons being either flared, as shown in Fig. 4, or left straight, as in Fig. 5, substantially as described.

No. 54,320.—J. W. FOARD, San Francisco, Cal.—*Newspaper File.*—May 1, 1866.—The portion of the hinge which passes through the file stick has a screw and nut to permit its extension as papers accumulate.

Claim.—The short recess at the bottom of the file, in combination with the movable nut, whereby the hinge is operated, the latter enabling one to adjust the file at that end to any desired thickness of paper.

No. 54,321.—JULIAN A. FOGG, Salem, Mass.—*Burial Casket.*—May 1, 1866.—A portion of the front side is attached to the hinged lid.

Claim.—Removing from the side of a coffin or burial casket whose lid opens backward, so much of its front side as is required to sufficiently expose the person of the corpse, the said removed portion being attached to the lid in such manner that when the lid is closed it will fit into its proper place, and the casket be as effectually closed as were it of the ordinary construction.

No. 54,322.—A. D. FOOTE, Berlin, Wis.—*Grain Spout.*—May 1, 1866.—The discharge of the grain at either or both exits of the hinged curved and bifurcated spout is controlled by a valve.

Claim.—First, in the operation of loading vessels with grain, providing for discharging the grain from an inclined spout at or nearly at right angles to the line of such spout, substantially as described.

Second, the combination of one or more curved sectional grain spouts B with the discharge spout of an elevator, substantially as described.

Third, providing for depositing grain at either one or both ends of a car or vessel at pleasure from a grain spout, substantially as described.

No. 54,323.—LAVINIA H. FOY, Worcester, Mass.—*Combined Corset and Bustle.*—May 1, 1866.—Explained by the claim.

Claim.—First, the combination with a corset of a series of eyelet holes *c*, or their equivalent, and a detachable bustle B, substantially as and for the purposes set forth.

Second, the combination with the back and sides of a corset of one or more rows of eyelet holes *c*, transversely to the line of junction of the corset in the rear, substantially as and for the purposes set forth.

Third, the combination with the rim or bustle B of the coiled spring *e*, substantially as set forth.

Fourth, making the rim or bustle B from a bias-cut piece of cloth, in combination with inserting an elastic C, or its equivalent, for the purposes stated.

No. 54,324.—CHARLES A. FRENCH, 2d, Boston, Mass.—*Button.*—May 1, 1866.—The disk sets upon the shouldered shank, and the cloth is embraced between two washers, supported respectively by another shoulder, or the shank and its swaged end.

Claim.—The combination of the button B, shouldered shank *a b d*, and washers or eyelets *e f*, substantially as and for the purpose described.

No. 54,325.—Austin Fuller, Plymouth, Ind.—*Beehive.*—May 1, 1866.—Explained by the claim.

Claim.—First, the arrangement of a beehive having a double case A B, with dead-air spaces between them, and having on the front only double doors A′ B′, both of which are hinged to the external case, and having also the sloping sides I terminating with a funnel-formed mouth, closed when desired by the perforated slide K, and having also doors F, located as described, substantially as and for the purposes set forth.

Second, in combination with the sloping sides I, the plates L and L′, substantially as and for the purpose set forth.

No. 54,326.—Lyman C. Gale, Chicago, Ill.—*Court Plaster.*—May 1, 1866.—The pieces, in assorted sizes and shapes, are put in boxes for sale.

Claim.—The assortment of the various forms of plaster above described, and put up in boxes or packages, as set forth.

No. 54,327.—Wesley Glenn, Philadelphia, Penn.—*Planking Clamp.*—May 1, 1866.—The jaw hooks embrace the joist and form a stay for the pivoted lever, whose front and rear screws bind on the board and the joist to force the latter downward and forward into position for nailing.

Claim.—The combination of the knee or brace D, having set screw E, and pawl screw G, and hooks A, the screw shaft H, and flanged screw sleeve J, arranged in the back or upper end of the hooks upon said shaft, so as to operate upon the hooks, substantially as and for the purpose described.

No. 54,328.—Henry Gottfried, New York, N. Y.—*Pneumatic Pump.*—May 1, 1866.—The piston head is cushioned against a supplementary spring piston, which moves in a chamber having valved induction and eduction ports.

Claim.—First, the employment of a yielding head M or heads M′ M′, arranged in the cylinder of air pumps in a manner to co-operate with the main piston, for the purpose herein shown and described.

Second, the employment and arrangement of the air chamber S and passage *q* to the reservoir or discharge pipe, in combination with the yielding head M, the whole operating as and for the purpose herein shown and described.

Third, the combination and arrangement of the drop valve *r* in the passage *q*, and with the yielding head M, operating in the manner and for the purpose herein described.

Fourth, the employment of the delivery valve *n*, arranged in the yielding head M, for the purpose of simplifying the construction in producing an air-tight joint between the yielding head and piston when brought together.

No. 54,329.—James Gower, Ironton, Ohio.—*Rolls for Manufacturing Three-headed Railroad Rails.*—May 1, 1866.—The triple flange is gradually eliminated by successive passes of the pile through rolls which form the heads. The mandrel prevents collapse of two heads by lateral pressure while the third is forming.

Claim.—The arrangement of rolls, Figs. 1 and 2, and mandrels A A′, or their equivalents, for the manufacture of three-headed railroad rails, substantially as set forth.

No. 54,330.—Henry H. Gridley, Auburn, N. Y.—*Head Block to Saw Mills.*—May 1, 1866.—The arm attached to the reciprocating carriage has a pointed cam pivoted to its lower end to insure the operation of the lever when the arm strikes the trip, and the consequent working of the intermediate devices that set the log to the saw automatically.

Claim.—First, giving the desired "set" to the head blocks of a saw-mill automatically, by the means substantially as above described.

Second, the combination of the lever E with its cam *a*, with the stationary rod or trip arm which it passes, as and for the purpose described.

Third, the mechanism whereby the "set" may be given to the head blocks of a saw-mill automatically, in combination with the hand lever to operate said mechanism by hand, as may be desired, substantially as above described.

No. 54,331.—John R. Grout, Detroit, Mich.—*Balanced Slide Valve.*—May 1, 1866.—The valve has a counterbalancing recess in its upper face, and connecting openings through its body to the exhaust chamber; recesses in the steam chest balance the valve when the induction ports are open; a bar prevents the wedging of the valve between its seat and the steam-chest cover.

Claim.—First, the recess or chamber *h*, formed in the upper face of the valve, substantially as and for the purpose set forth.

Second, the counterbalancing chamber *h* in the upper face of the valve, in combination with the openings *i i* from exhaust chamber *h*, for the purpose substantially as herein described.

Third, the recesses in the chest cover and the chamber *h*, in the upper face of the valve, in combination with openings *i i* and exhaust chamber *g*, operating substantially as herein set forth.

Fourth, the wire bar *l*, constructed and arranged to operate substantially as herein described.

No. 54,332.—SAMUEL B. GUERNSEY, Chicago, Ill.—*Broom Head.*—May 1, 1866.—The sheet metal broom head has two hinged parts with punched lips, which project interiorly, and a tightening pronged bolt inside.

Claim.—The combination of the bar E, provided with hooks *e e*, the rod F, and broom head A, when arranged so as to tighten the broom corn independent of the broom handle, substantially in the manner specified and shown.

No. 54,333.—SIVE GUILBERT, New York, N. Y.—*Car Brake.*—May 1, 1866.—The falling motion of the car is induced by the screw king-bolt, which is rotated by connecting rods and levers; the descent of the car brings the shoes of the pedestals, at the mid length of the car, in contact with the rails.

Claim.—The chains *d'* and bolts *e*, in combination with the screws *c*, and with the platform of a car, constructed and operating substantially as and for the purpose set forth.

No. 54,334.—CHRISTOPHER GULLMAN, Poughkeepsie, N. Y.—*Well Curb.*—May 1, 1866.—To abate the speed of the descending bucket a governor is attached, whose disks meet the resistance of the atmosphere when revolving.

Claim.—The arrangement of a ball or disk governor E, in combination with the windlass shaft B and well curb A, constructed and operating substantially as and for the purpose described.

No. 54,335.—WILLIAM H. HALL, New Gloucester, Me.—*Elastic Cushion and Guard for Horses Feet.*—May 1, 1866.—The upper surface of the elastic inner shoe conforms to the shape of the hoof; the under surface rests on the shoe, and the peripheral flange prevents cutting by interference.

Claim.—The use of the elastic inner shoe and guard, when cut or cast into the form herein described, for the purposes set forth.

No. 54,336.—WILLIAM J. HALLEFAS, Brooklyn, N. Y.—*Engine Governor.*—May 1, 1866.—The governor arms are connected to a stem, the vertical movement of whose oblique prolongation reciprocates the valve stem.

Claim.—The governor A A, when in combination with the inclined plane *f*, anti-friction rollers *i j*, and a valve stem *k*, arranged and operating substantially in the manner and for the purpose set forth.

No. 54,337.—C. A. HARPER, Little Rock, Ark.—*Portable Cooking Apparatus by Lamps, &c.*—May 1, 1866.—The other parts all pack into the oven for transportation. When in use the lamp acts below the central aperture in the boiler, and the oven is supported upon the latter.

Claim.—The boiler A, oven C, and burner E, when constructed, arranged, and combined substantially as herein described and set forth.

No. 54,338.—JOHN HARRIS, Marquette, Wis.—*Broom Head.*—May 1, 1866.—The butts of the brush are clamped in the upper socket and sustained at a lower point by serrated jaws, connected by edge straps to the socket.

Claim.—The combination of the crescent-shaped socket A, projecting handle socket *a*, arms *b b*, serrated bars C C, clamp jaws B B', screw *c*, and nut *d*, all constructed, arranged, and employed as and for the purpose specified.

No. 54,339.—ROBERT T. HAVENS, Wilmington, Ohio.—*Preparing Wood for Boots and Shoes.*—May 1, 1866; antedated April 16, 1866.—The wood is saturated with caustic alkaline solution, then immersed in a compound of two parts linseed oil and one part tallow.

Claim.—The process, as described, for the purpose of producing flexible wood for boots and shoes, as specified.

No. 54,340.—B. R. HAWLEY, Normal, Ill.—*Evaporator.*—May 1, 1866.—The front pan extends around the top and sides of the fire box, and the rear pans are heated by horizontal flues from the fire box.

Claim.—First, in apparatus for evaporating the juice of sorghum or other substances, forming an evaporating pan above and down each side of the furnace, substantially as described.

Second, forming two pans side by side behind the furnace, and passing the furnace flues directly through them to the chimney, when the said flues are controlled by separate dampers or sets of dampers for the flues of each of the back pans, substantially as shown and described.

No. 54,341.—WILLIAM H. HENDERSON, Franklin, Ind.—*Tinman's Forming Tool.*—May 1, 1866; antedated April 16, 1866.—The "former" has bevelled sides corresponding to the shape of the pan, and slots to receive the ends of different sizes after one end has been formed. A hinged clamp bends down the sides, and the corners are finished with a mallet.

Claim.—The frame A, having slots *a*, clamping plate B, forming plate C, and slide gauge E, all constructed as above described, and for the purpose set forth.

No. 54,342.—WILLIAM H. HENDERSON, Franklin, Ind.—*Tinman's Edging Tools.*—May 1, 1866; antedated April 16, 1866.—The edge of the sheet metal is clamped between jaws when the "former," in front of the jaws and under the tin, doubles the sheet over upon the upper jaw.

Claim.—In combination with frame A, the gauging slide *g*, vibrating clamp B, arms *c*, spring *d*, edging clamp C, and disk *e*, as above described and for the purpose set forth.

No. 54,343.—SILAS HEWIT, Seneca Falls, N. Y.—*Churn.*—May 1, 1866.—The horizontal beaters revolve in different directions above the triangular breaker. The zinc bottom is supported by a bridge piece and the lid rests on corner blocks.

Claim.—First, the beaters X Y, in combination with the triangular brake G, as and for the purpose specified.

Second, the shifting gear L, in combination with the gears P Q and beaters X Y, as and for the purpose specified.

Third, the bridge H′, for supporting the zinc bottom as described.

Fourth, the blocks K in each corner for the purpose set forth.

No. 54,344.—BENJAMIN H. HIBLER, Newport, Ky.—*Skate.*—May 1, 1866.—Explained by the claim.

Claim.—A skate composed of the following elements, to wit: An elastic plate or sole A, bent so as to present a vertical shoulder or abutment A′, a divided runner B C, a heel clip H *d e*, and an adjusting screw G, the whole being combined and adapted to operate as set forth.

No. 54,345.—JOHN HICKSON and LYMAN L. WILKINSON, Auburn, N. Y.—*Disinfecting and Preserving Composition.*—May 1, 1866.—Compounded of gypsum, charcoal, copperas, tannin, tobacco, permanganate of potash, and gum camphor.

Claim.—The compound Nos. 1 and 2, when made substantially as above set forth.

No. 54,346.—EDWIN H. HILL, Worcester, Mass., assignor to himself, L. W. POND, HENRY C. WILSON, W. H. BUTTERFIELD, and WILLIAM BUNCE.—*Water, Steam, or other Pipe.*—May 1, 1866.—Wires are coiled upon a mandrel and dipped in non-corrodible metal.

Claim.—As an improved article of manufacture, a pipe for water, steam, and other purposes, made as described and shown in the accompanying drawings.

No. 54,347.—GEORGE HILLEGASS, Philadelphia, Penn.—*Filtering Faucet.*—May 1, 1866.—The chamber in the spigot has a filtering diaphragm.

Claim.—Constructing the reversible spigot of a faucet with a chamber and dovetailed slide C, so arranged as to secure a filter, of felt, or other material E, or screen E′, across the chamber, through which the fluid must flow in passing through the faucet, substantially in the manner and for the purpose set forth.

No. 54,348.—J. M. HOPKINS, New York, N. Y.—*Bolt Fastening.*—May 1, 1866.—The slotted bolt is operated by a crank by means of exterior projecting studs connecting with other cranks on the same shaft.

Claim.—The combination of the crank shaft D, bolt H and thumb pieces or buttons L M, when connected and arranged together so as to operate substantially in the manner described, and for the purpose specified.

No. 54,349.—DAVID HOUSTEN, New York, N. Y.—*Grate Bar.*—May 1, 1866.—An inverted arch-piece below the grate bar, supporting it at its mid-length and resting at its end upon the same bearers.

Claim.—The bearing bar *b*, connected to the grate bar *a*, at or near its centre, and resting at its ends upon the same bearers as the ends of the bar *a*, but disconnected from said bar *a* at its ends, so as to allow the grate bar to expand independently of the bearing bar, as set forth.

No. 54,350.—J. M. HOPKINS, New York, N. Y.—*Flush Bolt.*—May 1, 1866.—The lever by which the bolt head is retracted is thrown out from the face of the bolt plate by a flush thumb piece; the coiled spring projects the bolt when the pressure is withdrawn and restores the levers flush with the plate.

Claim.—The combination of the bolt B, lever H, thumb lever M, and a coiled or other suitable spring with the connecting rod E, when arranged together so as to operate substantially in the manner described and for the purpose specified.

No. 54,351.—L. B. HOIT, Cedar Falls, Iowa.—*Straw Cutter.*—May 1, 1866.—On one end of the feed-roller shafts is a bevel wheel driving a pinion on the axis of the revolving knife; the free end of the latter is sustained by a guide, and a stationary guard disk prevents accidental contact with the knife.

Claim.—The combination and arrangement of the rollers C D, wheels F J, disk G, and knife I, as and for the purpose specified; and, in combination therewith, the guide M, as set forth.

No. 54,352.—HARRISON P. HOOD, Lowell, Mass.—*Bench Vice.*—May 1, 1866.—One jaw slips on the bar as the nut is rotated by the handle; the other jaw is fixed in the required position on the said bar by the pawl.

Claim.—In the said improved bench vice, as made with the jaw carriers A B applied to the bar C, as set forth, the arrangement of the clamp lever on the jaw carrier B, substantially as specified, the spindle being jointed to the said lever and extended upward through the bar C and jaw carrier, as explained.

No. 54,353.—EDMUND HOOLE, New York, N. Y.—*Burglar Alarm.*—May 1, 1866.—The dovetailed slots in the base plate of the alarm slip upon a corresponding plate attached to the door frame and bring the tripping bar across the track of the door in opening.

Claim.—The dovetail tapering slots D, situated opposite to each other in the frame or base plate A of a burglar alarm, in combination with the tapering dovetail plate E, substantially as and for the purpose specified.

No. 54,354.—JAMES HOPKINS, Madison, Wis.—*Sash Supporter and Fastener.*—May 1, 1866.—The double-faced cam is pivoted to the sash, and, by the engagement of the corrugations, in one or the other position, with the studs on the window casing, locks the sash.

Claim.—First, the brace A, having its upper end the heavier, and provided with the inclined corrugated cam face when constructed in the form shown, and arranged to operate as set forth.

Second, the combination of the stud *o*, provided with the journal, the shoulder screw *c*, and the double-faced cam or brace A, all arranged and operating as herein described.

No. 54,355.—DUANE HULL, Newburg, N. Y.—*Apparatus for Washing Kaolin, &c.*—May 1, 1866.—The tank has several partitions, over which the water falls consecutively; breaks change the course of the water, to induce the deposition of the grit.

Claim.—The breaks *c c c*, Fig. 1, and the said breaks *c c c* working on a hinge or joint, for the purposes set forth.

No. 54,356.—BRADLEY HULL, Westport, Conn.—*Dies for Making Hatter's Irons* —May 1, 1866.—The hatter's heaters are formed by first running the iron bar between the front dies, to give the required bevel, then cutting in sections, and inserting the sections vertically between the rear dies to finish them.

Claim.—The pair of dies Figs. 2 and 3, constructed and arranged in the manner and for the purpose substantially as herein described.

No. 54,357.—MARTIN G. IMBACH, New York, N. Y.—*Printing Press.*—May 1, 1866.—The operating devices of the bed, the inking and feeding mechanisms, proceed automatically, with the necessary pauses, from the single shaft, and are cited in the claims.

Claim.—First, the operating in a two-bed printing press for printing both sides of sheets simultaneously, of the beds by means of levers G G, so arranged and connected with the beds that the latter will move simultaneously in opposite directions, and both give the impression at once at opposite sides of the sheet, substantially as described.

Second, the employment or use in connection with said beds of movable wrist pins V, attached to slides and operated by eccentrics, or arranged in any equivalent way, so as to operate the levers G in such manner as to give the necessary "dwells" or cessation of movement to the beds, substantially as and for the purpose specified.

Third, the placing of the journals of the ink rollers A′ in rods B′, pivoted to radius arms C′, and connected with springs *h*, said parts being placed in such a position relatively with the forms on the platens that the rollers may pass over the forms and properly ink the same, substantially as set forth.

Fourth, operating the ink rollers A′ through the medium of the rods F′, arms C′ G′ *a**, and cams *i*′, when said ink rollers, thus operated, are used in combination with a press provided with two beds arranged substantially as described.

No. 54,358.—WM. G. W. JAEGER, Baltimore, Md.—*Apparatus for Continuous Distillation.*—May 1, 1866; antedated April 16, 1866.—The crude oil is heated in pipes immersed in water, and the lighter portions removed. It passes to a vapor-heated upper still, whence another grade is removed. It then passes to the main still, being heated in its passage by the heavier products which collect and cool at the central depression of the main still. The residuum passes continuously from the still by a trap to a condenser.

Claim.—First, feeding a still by means of a feed pipe passing up therein through its bottom, substantially as shown and described.

Second, discharging the heavy oils and the residuous matters resulting from the process of distillation in a continuous flow through the bottom of a still, substantially as shown and described.

Third, in distilling apparatus the following elements or principles of operation: 1. That the heavier oils and residuous matters are discharged therefrom as fast as they reach the bottom of the still. 2. That such matters are cooled or reduced to a comparatively low temperature before they are finally discharged or brought in contact with the atmosphere; and, 3. That the still is kept continually charged by a supply which is led up through and heated by the matters so discharged therefrom, substantially as described.

Fourth, passing the supply oil or liquid to a still through the residuum and heavy oils discharged therefrom, substantially as described.

Fifth, controlling the flow of the oils and residuous matters discharged from the bottom of a still, by means of a faucet or faucets in the pipes through which they pass, substantially as shown and described.

Sixth, reducing the temperature of the outgoing heavy oils and residuum, and increasing the temperature of the ingoing supply of oil or other liquid, by running the pipe of the one within the other, substantially as shown.

Seventh, the open supply pipe Y, in combination with the pipe *s* leading from the bottom of the upper still L, and the feed pipe P leading to the lower still O, substantially as above shown.

Eighth, controlling the flow of the supply oil or other liquid into the feed pipe P by means of a valve W, substantially as above shown and described.

Ninth, in combination, in a distilling apparatus, the use of an open float or floats, substantially as described, the feed pipe P and the vertical supply pipe V, whose upper open end communicates with the overflow chamber, substantially as shown.

Tenth, driving off the benzine and lighter oils and water from the oil to be distilled, by means of the heat which radiates from the top of the main still and steam chamber G, substantially as described.

Eleventh, interposing a water and steam chamber, or water and steam pipes, between the upper and lower stills, for the purpose of regulating the temperature in the upper still, substantially as and for the purpose above described.

Twelfth, in combination, feeding oil or other liquid to a still continuously, and at a temperature made to approximate to that of the charge, as described, and at the same time discharging the heavier oils and residuous matters continuously as they are thrown down towards the bottom of the still, substantially as shown and described.

Thirteenth, in combination, the lower still O, the upper still L, and the water and steam chamber G, with or without a circulating pipe M, substantially as described.

Fourteenth, connecting the water and steam chamber G to the boiler, substantially as and for the purpose above described.

Fifteenth, raising the temperature and controlling the inflow of oil or other liquid as it passes into the upper still, substantially in the manner above described.

Sixteenth, in combination, the open pipe V, the pipe *s*, the tube T, and the overfloat chamber 11, substantially as described.

Seventeenth, conducting the supply of oil or other liquid into the upper still through a hot water and steam chamber, substantially as described.

Eighteenth, the transparent receiving chamber *a*, or other equivalent apparatus, to receive the heavy oils and other matters discharged from the bottom of a still, substantially as described, with or without a gas or vapor escape pipe.

Nineteenth, the receiver *d*, constructed substantially as described, with a refrigerating apparatus connected thereto, for cooling the matters discharged from the still before their final escape, substantially as described.

Twentieth, providing the transparent chamber and the receiver *d*, one or both, with vents or vapor and gas escape pipes *b* and *q*, substantially as described.

Twenty-first, applying a refrigerating apparatus to the pipe Y, behind the transparent receiving chamber *a*, substantially as described.

Twenty-second, in combination, the regulating faucet Z in the pipe which delivers the discharged heavy oils and residuous matters into chamber *a*, the transparent chamber *a*, and the trap pipe *c*, substantially as set forth.

Twenty-third, in combination, the transparent chamber *a*, its vent pipe *b*, the trap pipe *c*, and the receiver *d*, substantially as set forth.

Twenty-fourth, placing a cooling device beneath the receiving chamber *a*, substantially as above described.

Twenty-fifth, in combination, the chamber *a*, provided with a vapor or gas pipe, as shown, and the trap pipe *c*, or its equivalent, substantially as shown.

Twenty-sixth, in combination, the chamber *a*, provided with a vapor or gas pipe, as shown; the cooling device 23, and a trap pipe *c*, or its equivalent, substantially as shown.

Twenty-seventh, in a distilling apparatus, extending the boiler upwards around the smoke stack or flue, as shown at E, substantially as and for the purpose above described.

Twenty-eighth, in a distilling apparatus, drawing off from the bottom of the still continuously, or as often as required, the heavy oils and residuous matters of the charge, and at the same time feeding the still as the charge is reduced, by a supply through a pipe which traverses or passes through that portion of the charge which is being withdrawn, substantially as described.

Twenty-ninth, in a distilling apparatus with continuous discharge of heavy oils and residuum, conducting the flames and products of combustion from the fire chamber or chambers towards the centre of the bottom of the still, or place of discharge, substantially as shown.

Thirtieth, the use in a distilling apparatus of a float or floats made with a vent pipe, as above shown, or equivalent device, either with or without a valve, substantially as above set forth.

Thirty-first, the application to a hollow float of a pipe rising therefrom, with or without an outwardly opening valve, substantially as and for the purpose above described.

Thirty-second, cleaning the bottom of still during distillation, by means of a scraper or scrapers operated from without, substantially as shown and described.

Thirty-third, the ways 16 and 17, severally constructed and applied as shown, for the purpose of raising the scraper from the bottom on its return movement.

Thirty-fourth, placing a water jacket 24, or equivalent device, between the end of the still and the stuffing box 14, substantially as shown and described.

Thirty-fifth, using the overflow waste water from the condenser for raising the temperature of the fresh oil or other liquid while on its way to a still, by passing the same through the water in the chamber *y*, substantially as described.

Thirty sixth, passing the overflow waste water of the condenser, (after it leaves the chamber *y*,) through a water jacket surrounding the goose neck *h*, and thence through a water chamber *p*, between the said goose neck *h* and the overflow chamber 11, for the purpose of re-heating it, substantially as described.

Thirty-seventh, the use of the supply chamber 1, which receives the oil or other liquid after it has traversed the water chamber *y*, and through which the heated water from water chamber *p* is led in a pipe *n*, substantially as and for the purpose above described.

Thirty-eighth, the double furnaces A A, combined and operating substantially as and for the purpose described.

No. 54,359.—JACOB JAHRAUS, Buffalo, N Y.—*Beer Faucet.*—May 1, 1866.—The beer escapes at the annular opening below and is foamed by the vertical motion of the plunger, which forces a jet through a central orifice.

Claim.—First, making the discharge nozzle C an extension of the key chamber B, and locating the pump barrel E therein, in combination with the key D and plunger F, arranged and operating in the manner described.

Second, extending the key passage *d'* downward at each end thereof on the opposite sides of the discharge nozzle extension of the key chamber, as described.

Third, forming the key chamber cap G with a cup *g'*, for the purpose set forth.

Fourth, the holes *h'* in the key, as set forth.

Fifth, the combination of the button f^2 with the perforations f^1, for the purpose set forth.

No. 54,360.—GEORGE R. JOHNSON, Wilmington, Del.—*Machine for Graining Morocco.*—May 1, 1866.—The horizontal table reciprocates beneath the vibrating sector.

Claim.—For graining morocco a moving table and a swinging arc operating together, substantially as described.

No. 54,361.—SAMUEL F. JONES, St. Paul, Ind.—*Animal Trap.*—May 1, 1866.—As one leaf of the angular tilting platform descends, a shutter closes in the rear and the other leaf rises and resets itself.

Claim.—The angular vibrating platform E, treadles F, coiled spring *v*, hooks *s*, catches *r* and shutter G, when constructed and arranged in the manner and operated for the purpose substantially as set forth

No. 54,362.—JOHN KEITH, Worcester, Mass.—*Machine for Forming Pen-holder Springs.*—May 1, 1866.—The forming rod reciprocates in a tubular spindle, its lower end penetrating the die in the base. A further impulse depresses rod and spindle, completing the operation.

Claim.—First, the combination of the lever G, having cams *o p*, with spindle D and the forming rod E, substantially as set forth.

Second, the combination, with spindle D, and forming rod E, of the springs *c* and *d*, and rod *e*, substantially as set forth.

Third, the combination with spindle D and forming rod E of pin *i*, springs *c* and *d*, and screw *b*, as and for the purpose set forth.

Fourth, the combination of the forming rod E with spindle D, springs *c* and *d*, and die I, the parts being constructed and arranged for joint operation, in the manner set forth.

No. 54,363.—JAMES E. KELSEY, Providence, R. I.—*Stopping and Starting Cars.*—May 1, 1866.—The momentum of the car when arrested is utilized to accumulate a starting force; the brake causes a frictional contact between the driving wheels and the friction wheels, which condense the springs.

Claim.—First the arrangement of the rod N connected above and below the fore and hind axles to their respective friction wheels, so as to give the reverse motion on the said wheels by the same longitudinal motion of the rod, substantially as described.

Second, the S-shaped spring connecting the pawl and the rod N, substantially as and for the purpose described.

Third, the combination of the ratchet teeth on the wheel B, the pawl Q, the spring P, rod N, spring T, and friction wheel D, operating substantially as described.

Fourth, the combination of the rod N, spring T, and the friction wheels D D, of the respective axles, constructed and operating as described.

Fifth, the friction wheel D revolving by contact with the car wheel to simultaneously arrest the latter and compress the spring on the rod N, substantially as described.

No. 54,364.—HIRAM A. KIMBALL and ANDREW J. LAWRENCE, Philadelphia, Penn.—*Artificial Leg.*—May 1, 1866.—Explained by the claim.

Claim.—First, forming a frictionless joint *d* in artificial limbs by combining pure soft rubber with vulcanized gum, in the manner and for the purpose substantially as described.

Second, the two blocks *b* and *c* in combination with the prolongation of the pitman *p*, producing two opposite points of contact *r* and *r'*, thereby relieving the ankle pin from the strain or leverage of the foot; the same being constructed and arranged substantially as shown and described.

Third, the combination of the lever *w* with the soft packing *x* and the roller *y*, for locking and unlocking the knee and lowering the toe, the several parts being arranged and constructed substantially as shown and described.

Fourth, the combination of the metallic spool B, rubber packing D, and the steel plates *f f'*, to produce a slight stiff lateral motion of the ankle joint, the whole constructed and arranged substantially as shown and described.

No. 54,365.—JOHN W. KINGMAN, North Bridgewater, Mass.—*Applying Paint to Surfaces.*—May 1, 1866; antedated April 19, 1866.—The mode of obtaining a smooth surface of paint at one application is explained in the claim.

Claim.—The application of paint in form of a wash, or mixed with water, and the applying oil over it before it becomes dry, substantially as herein described.

No. 54,366.—T. T. KNEELAND, Tecumseh, Mich.—*Sorghum Evaporator.*—May 1, 1866.—The pan has a system of steam pipes; a vertical gate extends across the pan, notches in its lower edge fitting over the tubes.

Claim.—The pan A, provided with a series of steam pipes B C, in combination with the gate D, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 54,367.—EDWARD H. KNIGHT, Washington, D. C.—*Sewing Machine Guide.*—May 1, 1866.—The pressure of the foot is adjustable as to power and position; it is used to deflect the material, to keep it against a guide edge, or by its pressure and position relatively to the line of feed, to deflect the material in a given curve.

Claim.—An adjustable spring pressure pin or foot, constructed substantially as described, and adapted to press at one point upon the cloth outside of its line of seam, to deflect the same, but not by extreme pressure or penetration, to form a centre of revolution.

Also, the said spring pressure pin or foot as adjustable in a horizontal plane, substantially as described.

No. 54,368.—E J. KNOWLTON, South Lyon, Mich.—*Land Roller.*—May 1, 1866.—The yielding support on the inner ends of the rollers allows them to rise or fall as they traverse a ridge or a furrow, to conform to the inequalities of the ground.

Claim.—First, a land roller composed of two parts C C, having the inner or adjoining ends of their axles fitted in an adjustable bearing or bar D, substantially as and for the purpose set forth.

Second, the lever I, in combination with the bar D, substantially as and for the purpose specified.

Third, the plank or seat support E, in combination with the bar D, and rollers C C, arranged substantially as and for the purpose set forth.

No. 54,369.—GEORGE A. KNOWLTON, Natick, Mass.—*Pegging Jack.*—May 1, 1866.—The toe standard is permanent; the heel standard is adjustable vertically for varying heights of lasts.

Claim.—The heel standard D, made adjustable vertically, for the purpose set forth.

Also, the spindle *j*, substantially as and for the purpose described.

Also, the lever I, operating substantially as and for the purpose set forth.

Also, connecting the lever F with the lever I, by means of adjustable rods G H, or their equivalents, substantially as and for the purpose specified.

Also, a heel standard, made adjustable vertically, as well as horizontally, in combination with a toe standard, made adjustable horizontally, substantially as and for the purpose described.

No. 54,370.—ELIAS KRAMER, Alvira, Penn.—*Clover Harvester.*—May 1, 1866.—Spiral cutters revolve above the curved fingers which gather the heads. The stalks escape by the openings at the rear ends of the fingers. The inner and outer ends of the platform are simultaneously adjusted as to vertical position.

Claim.—First, the spirally-arranged revolving shears H H, in combination with the fingers O, when curved on their upper faces, and having openings at their bases, substantially in the manner and for the purpose set forth.

Second, in combination with the wheel Q, adjustably attached to the box C, so as to regulate the height of the cut on the outer side, the brace and guard N, when adjustably attached to the axle of the wheel Q, by a slot and nut, substantially as and for the purpose set forth.

Third, in combination with the braces D and D′, hinged as described, the cords M and M′, and hand lever L, substantially as and for the purpose set forth.

No. 54,371.—S. Laihm, Canton, Ohio.—*Sheep Rack.*—May 1, 1866.—The double rack has lids, feed troughs, and shutters.

Claim.—In combination with sheep racks, such as described, the arrangement of the hinged covers F, hinged rack or rack boards G G′, and hinged or sliding sides E C. with regard to said racks, and the grain troughs H, so that the food may be appropriately distributed, and the sheep rack opened or closed, in whole or in part, as herein described, and for the purpose set forth.

No. 54,372.—E. M. Krum, Nassau, N. Y.—*Harvester.*—May 1, 1866.—The centre of vibration of the finger bar is coincident with the axis of the crank shank to which the pitman is attached. The finger bar is raised by the vibration of the curved segment on the tilting lever, which communicates by a chain with a similar segment on the heel of the finger bar.

Claim.—First, hinging the finger beam of the cutting apparatus to the draught frame by means of eye bearings formed directly on the inner shoe F, the crank shaft which drives the sickle and pendant brackets E E, which afford tubular bearings for the crank shaft, and tubular pivots for the finger beam, both at front and rear of the cutting apparatus, substantially as described for the purpose set forth.

Second, combination of the inner hinged shoe, crank shaft and inclined jointed shaft D, the said parts being constructed and arranged, and operating substantially as described.

Third, supporting the upper end of the inclined shaft D, in a jointed bearing box *m*, when this shaft is connected to the horizontal crank shaft D′, by a universal coupling *g*, substantially as described.

Fourth, the construction and arrangement of the tubular pivots *h h*, pendants E E, shoe F, for the purpose of supporting a horizontal crank shaft, substantially as described, and for the purpose set forth.

Fifth, the arrangement of the pitman box *j j*, so as to be tightened by the end of the pitman rod *j*, setting against a half-bearing box *l*, substantially as and for the purpose shown and described.

Sixth, the segment J^2 on the finger beam G, in combination with the segment J′ in the hand lever J, and chain for enabling the attendant to adjust the finger beam to a vertical position, substantially as described.

No. 54,373.—Samuel W. Langdon, Jefferson county, Iowa.—*Barnyard Scraper.*—May 1, 1866.—The oblique board is attached to a sled and is raised to dump its load by the lever which is pivoted on the rear carriage.

Claim.—The invention of the foregoing machine, and the combination of its different parts, as set forth above, and as shown by the accompanying drawings.

No. 54,374.—Hiram R. Lavey, Bristol, Wis.—*Reaping and Mowing Machine.*—May 1, 1866.—The motion of the cutter bar is varied by the changeable gearing operated by levers and stops. The supporting arm is adjustable in the slotted standard of the reel and the standard in a slotted arc; the sliding bar of the drum is connected to the reel shaft by a universal joint.

Claim.—The arrangement of the spur wheels E F, and adjustable pinions G H, when constructed and operating substantially as herein specified and shown.

Also, the combination and arrangement of the spur wheels E F, pinions G H, levers I J, and springs *h i*, operating substantially as and for the purposes shown and described.

Also, in combination with the above the employment of the braces *f g*, as and for the purposes specified and described.

Also, the arrangement of the adjustable pinions G H, provided with the stops *b c*, with the shaft K, provided with the projection *a*, operating substantially as specified and shown.

Also, the combination of the slotted arm *r*, slotted arc *s*, support *p*, and key *q*, arranged and operating as specified and shown.

Also, in combination with said adjustable support *p*, the arrangement of the drum *m*, and sliding bar *n*, and reel *o*, arranged and operating as specified.

No. 54,375.—John Leinweber, Louisville, Ky.—*Enveloping Hemp or Flax Waste.*—May 1, 1866; antedated December 12, 1865.—A hopper containing a toothed cylinder and revolving brushes distributes the waste flock upon the sheet of sliver as it comes from the carder. The edges of the sliver are turned over and envelop the short staple.

Claim.—The mode of enveloping the waste of hemp or flax in a sliver of the longer staple, substantially as set forth.

Also, provision in, or attachment to, a hemp or flax carding machine of the flock-feeding and distributing mechanism I J K L, substantially such as described.

Also, the flock feeder, capable of being partially rotated upon the shaft H, for access to the delivering mechanism, in the manner explained.

No. 54,376.—James C. Lewis, Sharpsburg, Penn., assignor to himself and Robert C. Totten.—*Annealing Box.*—May 1, 1866.—The bottom, top, and sides are made in separate pieces.

Claim.—Constructing cast-iron annealing boxes, as described, having the body of the box in a separate piece from the bottom and top or cover, for the purpose of preventing its warping by the action of the heat of the annealing oven.

No. 54,377.—Wm. J. Lewis, Pittsburg, Penn.—*Die for making T-head Bolts.*—May 1, 1866.—The recesses in the gripping dies are unequal, but combine to form a circular section, and the spaces behind the grippers, opposite the staving die, correspond respectively with the narrow side of the head, nearly and with the longest part of the head.

Claim —First, constructing the gripping dies of bolt-heading machines with a double or single recess in the front, or that part farthest from the header, in addition to the one in which the header works, whereby the bolt head may be worked into proper shape by submitting it alternately to the action of both sides of the gripping dies.

Second, the mode herein described for driving the pin off the bolt head—that is to say, first staving the rod to form the head, and subsequently compressing it laterally, so as to throw the flash or fin, produced in staving, in a line with the path of the header, so that on submitting the head to the action of the header a second time, the fin will be driven into the body of the bolt.

Third, parting or separating the gripping dies on one side of a right line drawn longitudinally through the centre of the header, so that the cylindrical hole will be deeper in one die than in the other, for the purpose of overlapping and driving off the pin produced on one side of the bolt by simply turning it one-half way round to bring the opposite side into the deepest recess.

No. 54,378.—Elijah A. Lucas, Bloomington, Ill.—*Washing Machine.*—May 1, 1866.—A reciprocating rotary motion is imparted to the clothes wheel by means of a straight rack, one of whose toothed sides engages with the pinion on the shaft, and the other is engaged by the segment gear above.

Claim.—First, communicating a rotary motion to the shaft C of a washing machine, from a vibrating segment F, by means of a double rack bar D, substantially as described.

Second, the combination of the pinion *d* on shaft C, the pinion J on frame E, and the wheel or segment F, with a bar D, having teeth on two of its sides, in the construction of a washing machine, substantially as described.

No. 54,379.—Alfred Manning, Fair Haven, Conn.—*Jaws for Booms and Gaffs of Vessels.*—May 1, 1866.—The holding pieces of the jaws are bolted to the boom, and the hinged pieces secured by the jaw band around the mast.

Claim.—The combination of the iron hinges with the jaws, when each jaw is made in two parts, and the whole is constructed, arranged, and fitted for use, substantially as herein described and set forth.

No. 54,380.—Frank N. Martin, Cincinnati, Ohio.—*Stirrup.*—May 1, 1866.—The sides have removable tread pieces, and are pivoted above, permitting the stirrup to open by the application of lateral force.

Claim.—First, a stirrup composed of two distinct members D E and D′ E′ hinged together at their upper portions, substantially as set forth.

Second, in this connection the rings or recessed projections E E′, for the reception of pads, in the manner stated.

Third, the use of a spring clasp, Fig. 3, in the manner set forth.

No. 54,381.—Joseph Martin, New Oxford, Penn.—*Gate.*—May 1, 1866.—The gate is latched shut or open; the latch is operated by a continuous cord, within reach of an equestrian approaching in either direction, and the gate is closed by a weight.

Claim.—First, the arrangement of levers *j j′* beneath the latch *h*, which is used to hold the gate open, in combination with the pull ropes S S^2 and overhanging beams E F, substantially as described.

Second, the combination of levers *r′ k′*, ropes *k r*, beam H, and pull ropes S S^1 S^2, with the levers *j j′* and latch *h*, substantially as described.

No. 54,382.—John McGill, Boston, Mass.—*Solution to Prevent Fabrics of Cotton, Linen, &c., from Burning.*—May 1, 1866.—Aqueous solution of sulphate of ammonia to render fabrics incombustible.

Claim.—The application of the aforesaid chemical to all combustible substances, materials, and fabrics, as in the above manner, and for the purpose set forth.

No. 54,383.—W. C. McGill, Cincinnati, Ohio.—*Lock.*—May 1, 1866.—When the key is inserted from the inside a plate is thrust against the outer key hole to prevent the insertion of picks.

Claim.—First, the plate D, and springs *d*, operating and constructed as and for the purpose heretofore described.

Second, the plate D, springs *d*, and tube E, constructed and operating substantially as above described, and for the purpose set forth.

No. 54,384.—EDWARD MENTZ, Philadelphia, Penn.—*Curtain Fixture.*—May 1, 1866.—The curtain is clamped between two semi-cylinders, which form a roller; the latter is journalled in a recess in the bracket, and rotated by a continuous cord, which makes the circuit of the window casing and a turn around the pulleys at the end of the roller.

Claim.—First, the bracket G′, having in it the recess R and pulley *p*, arranged substantially as described.

Second, the centrally divided roller B, secured upon the shade A by screws C, in combination with the end pulleys D D′, substantially as described.

Third, operating a window shade by a cord *t* passing around pulley D′ on one side, over pulleys M M in the head, and down the other side around pulley D, substantially as described.

No. 54,385.—SETH W. MERRILL, Assabet, Mass.—*Window Blind.*—May 1, 1866.—The vertical bar connected to each slat is buttoned into a recess in the frame, to keep them shut or turned against the frame to lock them open.

Claim.—The application of the connection bar D to the several slats at or near their ends, and so as to be capable of not only being moved up and down with them, but of being turned over against the rear face of the contiguous side bar of the frame, in a manner and so as to hold the slats open, as specified.

No. 54,386.—FREDERICK MOHR, Fond du Lac, Wis.—*Folding Table.*—May 1, 1866.—The leaf supporting legs are hinged together; they diverge quarterly for support, and collapse for stowage, allowing the leaves to fall.

Claim.—First, the leg D D′ C C′, when constructed and operating substantially in the manner and for the purposes set forth.

Second, the combination and arrangement of the leaves A A′, centre piece B, and legs D D′ C C′, substantially as and for the purposes set forth.

No. 54,387.—ABNER MOORE, Jr., Hillsboro', Ohio.—*Step Ladder.*—May 1, 1866.—Slides in the slotted ladder sides afford points of attachment for the braces, which extend to the legs of the ladder.

Claim.—The slide C, in combination with the arms D, legs B, and side pieces A, substantially as specified.

No. 54,388.—SAMUEL C. MOORE, Boston, Mass.—*Egg Beater, Cake Cutter, and Nutmeg Grater.*—May 1, 1866.—Explained by the claim.

Claim.—First, a case provided with a removable central shaft with radial spikes or pins, arranged spirally in the shaft, forming an egg beater, substantially as described.

Second, in combination with the egg beater, the extension of the case at the lower end, forming a cake cutter, substantially as described.

Third, in combination with the egg beater and cake cutter described, the nutmeg grater, arranged in the outer bottom, as described.

No. 54,389.—CHARLES H. MOSELEY, Brooklyn, N. Y.—*Apparatus for Preparing Nitrous Oxide Gas.*—May 1, 1866.—The retort rests, by its elastic collar, upon the box, and communicates by a flexible tube with the series of jars in which the gas is purified.

Claim.—First, the combination of the portable box A with a set of nitrous oxide gas purifier jars, arranged and operating as hereinbefore set forth.

Second, in combination with the beak of the generating retort, an elastic India-rubber or other non-conducting collar K, for the purposes hereinbefore set forth.

Third, the method of suspending the retort by means of an elastic tube attached to the end of the beak of the retort, whereby it is enabled to dispense with the use of a retort stand, as hereinbefore set forth.

No. 54,390.—ALBERT L. MUNSON, New Haven, Conn.—*Table Cover.*—May 1, 1866.—Explained by the claim.

Claim.—A table cover made of paper, whether strengthened with cloth or not, ornamented substantially as described, and for the purpose set forth.

No. 54,391.—G. R. NEBINGER, Lewisburg, Penn.—*Broom Head.*—May 1, 1866.—The butts of the brush are bent through a wire loop, which is made to clasp the end of the handle; a metal cap and sleeve secure the parts.

Claim.—A broom head consisting of the loop C, constructed as shown and described, and used in combination with the handle A and cap B, provided with the sleeve *b*, all arranged and operating as herein set forth.

No. 54,392.—Foster Nevergold and George Stackhouse, Pittsburg, Penn.—*Machine for Raking and Loading Hay.*—May 1, 1866.—The elevating rake, which sweeps the accumulation of hay from the gatherer, and moves backward as it rotates to deliver the hay on to the wagon bed.

Claim.—The arrangement of the pitman *y*, rocking shaft *w*, and sliding bearings *r r*, in combination with the pinion *l*, sliding rack *m*, and pitman *p*, operating so as to impart a compound motion to the elevating rake, substantially as herein set forth.

No. 54,393.—William H. Newby, Seymour, Ind.—*Animal Trap.*—May 1, 1866.—The weight of the animal on the platform releases and closes the pivoted spring door; the trap is reset by the passage of the animal to the second chamber.

Claim.—The arrangement of the door L and spring M, in combination with the tilting platform R, the trap door H, lever rod *c*, and catch *q*, constructed and operating in the manner and for the purpose herein specified.

No. 54,394.—L. H. Olmsted, Stamford, Conn.—*Oiler.*—May 1, 1866.—To prevent injurious pressure, the range of motion of the flexible bottom is limited by the interior tube.

Claim.—First, providing an oiler with an internal rod or tube, placed in line with the main discharge tube, and adapted to limit the movement of the flexible part of the can by coming directly in contact with the discharge tube in the manner and for the purpose herein specified.

Second, in combination with the internal tube A, a bearing or guide therefor, formed in or on the bottom of the can, substantially as described.

No. 54,395.—Isaac T. Packard, Chicago, Ill.—*Reed Musical Instrument.*—May 1, 1866.—The coupling levers cross each other, have their fulcrums at their rear ends, and are attached at their intersection. When the levers do not act, an additional pressure is put upon the valves.

Claim.—First, an octave coupler for reed musical instruments, constructed with the levers B and C, the fulcrums of which are at or near their rear ends, and their connection with each other is between their fulcrums and the keys and tracker pins, upon which they operate.

Second, the movable spring rail H, when constructed and operating substantially as and for the purpose herein set forth.

No. 54,396.—Aaron Palmer, Brockport, N. Y.—*Harvester.*—May 1, 1866.—Explained by the claim.

Claim.—First, forming a movable, self-adjusting, single joint to connect the finger beam by the medium of the shoe E to the hanger C, without an intervening gate, by means of the grooves *g g* and pins *h h*, or equivalents, when the said arrangement is used in combination with the pitman M passing through the axle of the grain side wheel to operate the cutter, substantially as set forth.

Second, raising the finger bar from the ground by the forward motion of the machine by throwing the weight of said finger beam upon the periphery of the wheel, or upon an auxiliary rim of the same by means of a connection O that connects it with any suitable mechanical arrangement for producing contact with the wheel or rim, substantially as described.

Third, a brake lever P and brake *p* in combination with a finger bar D and supporting wheel A′, in such a manner that the driver can raise the finger beam by merely bringing the brake in contact with the wheel, substantially as specified.

Fourth, making the main frame B of a two-wheeled harvester tubular to secure lightness and strength and to allow the passage of the pitman, said frame being stationary or non-revolving and having the wheels turning on each end, substantially as described.

No. 54,397.—Aaron Palmer, Brockport, N. Y.—*Harvester Crank Motion.*—May 1, 1866.—The box is secured upon the wrist pins by grooves engaged by flanges on the sectional face plate. The packing around the wrist keeps the oil in the box. The hub of the balance wheel forms an oil cup.

Claim.—Retaining the box H upon the crank pin *i* by means of the groove and flange *k l*, arranged and operating substantially as described.

Also, in combination with the box H and crank pin *i*, the chamber I filled with fibrous or other suitable packing *m*, substantially as specified.

Also, the revolving oil chamber *h* secured to the top of the balance wheel in combination with the revolving shaft A and statio. . box *c*, substantially as and for the purpose herein set forth.

No. 54,398.—Nathan Parrish, Kalamazoo, Mich.—*Stump Extractor.*—May 1, 1866.—The rocking lever rotates the windlass shaft and winds up the chain. The pawls and ratchet maintain the tension. The tackle affords a means of loading the stump on to a sled.

Claim.—First, the arrangement of the lever D, circular bar E, ratchet C, shaft B, pawls F F′, and tackle H, relatively to each other, and operating in the manner as described.

Second, the movable bent L in combination with the lever D arranged and operating independently of the shaft B, in the manner and for the purpose herein described.

No. 54,399.—JOHN S. PATRIC, Victor, N. Y.—*Pump.*—May 1, 1866.—The diaphragm is clamped between the adjacent closed ends of the cups and laps against them alternately as its position is changed.

Claim.—The cups D E, one or both, in the formation of the piston head, constructed and arranged with the envelope *i*, and operating substantially in the manner and for the purposes set forth.

No. 54,400.—SAMUEL PIERCE, Cambridge, Mass.—*Cooking Stove.*—May 1, 1866.—Explained by the claims.

Claim.—First, the combination of the flue F when placed over the fire box A with the said fire box and with flues E by means of dampers *h*, operating substantially as described and for the purpose stated.

Second, the air flues G formed of the double oven plates passing over and around the oven and behind the fire box, enabling the current of air flowing in them to be intensely heated so as to heat the interior oven plates behind the ash pit and render equable the atmosphere of the oven by discharging the hot air through holes *e*, thus ventilating the oven.

Third, the combination of the air flues G with their holes *e*, as just described, and with the oven O, with holes *f* and flue H behind the fire box, having its holes at *g* in the fire box to make a hot blast and effectually consume the gases, substantially as described.

Fourth, the holes *g k* at the back of the fire box above and below the outlet thereof, arranged and combined with respect to the combustion chamber over the fire pot, substantially as and for the purpose described.

Fifth, forming the bottom and back of the stove of double plates with an interspace when the interior one of such doubled plates is pierced with holes *l*, as drawn, for the purpose of having ashes drift through said holes and between the plates to form a non-conducting back and bottom, substantially as described.

No. 54,401.—LOUIS POSTAWKA and ANTON KRASINSKI, Boston, Mass.—*Piano Seat.*—May 1, 1866.—The elevating screw is turned by a nut-wheel inside the frame.

Claim.—First, the combination of seat *h*, and its standards *n*, with frame or stand *a*, and wheel *p*, all constructed as described, so that the seat may be raised or lowered by screw and wheel, as specified.

Second, the whole piano seat constructed in the manner and for the purposes set forth.

No. 54,402.—NATHANIEL F. POTTER, Providence, R. I.—*Peat Machine.*—May 1, 1866.—Improvement on his patent of April 18, 1865. The tempering vessel has pockets with discharging doors and a scraper which follows the motion of the wheel. Changeable gears proportion the rate of motion to the radial position of the wheel.

Claim.—First, the use of one or more receiving and delivering pockets F, in combination with a tempering mill, substantially as described for the purposes specified.

Second, combining with a mill for tempering peat or other material a scraper G, operating in the manner described for the purposes specified.

Third, double set of driving gears *d d' e e'*, and the clutch *f*, when the same are combined with the sweep of a tempering mill, substantially as described.

No. 54,403.—T. J. PRICE, South Union, Ky.—*Grain Separator.*—May 1, 1866.—The feed and discharge are regulated by inclining the machine, which is mounted on rockers.

Claim.—The combination of rockers B B with a fanning mill, as and for the purposes specified.

No. 54,404.—GEORGE W. RAY, Springfield, Mass.—*Manufacture of Paper Collars, &c.*—May 1, 1866.—The paper is embossed to imitate fabric.

Claim.—As a new article of manufacture, paper embossed and enamelled, whether before or after its conversion into articles of wearing apparel, all substantially as herein described.

No. 54,405.—JAMES N. RAY, Indianapolis, Ind.—*Machine for Bending Wood.*—May 1, 1866.—The former is shaped for bending plough handles, and has attached a bending strap, nib and clamp, held in contact by a wedge.

Claim.—First, in a machine for bending wood, the former A, Figs. 1 and 2, when constructed as herein described and operated as herein set forth.

Second, the combination of the former A, the strap S, the nib N, the clamp C, and the wedge W, whether the wedge be used as shown at W or at O, substantially as and for the purposes herein set forth.

No. 54,406.—ADAM R. REESE, Philipsburg, N. J.—*Harvester Rake.*—May 1, 1866.—Explained by the claim.

Claim.—The combination in a two-wheeled hinged joint of the vertical rake shaft, mounted upon the finger beam and driven from the main frame with the cam ring and rake arms, when arranged and operating as described, which enables the driver's seat to be located outside of the path described by the rake arms, as set forth.

Also, the combination of the finger beam and main frame with the tubular *x*-shaped frame G G', as described, for the purpose of supporting and bracing the rake shaft.

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